

Arg Leu Val Pro Asn Pro His Glu Thr Leu Asp Ala Gln Asp Pro Ser
 100 105 110
 Phe Gln Glu Ser Lys Arg Arg His Ile Ala Arg Val Gly Met Met Ala
 115 120 125
 Ala Phe Ala Ile Thr Ala His Asn Phe Pro Glu Gly Leu Ala Thr Phe
 130 135 140
 Phe Ala Thr Leu Glu Asn Pro Ala Val Gly Met Pro Leu Ala Leu Ala
 145 150 155 160
 Ile Ala Ile His Asn Ile Pro Glu Gly Ile Ser Ile Ala Ala Pro Val
 165 170 175
 Tyr Phe Ala Thr Arg Ser Arg Lys Lys Thr Val Trp Ala Cys Leu Leu
 180 185 190
 Ser Gly Leu Ala Glu Pro Leu Gly Ala Ala Leu Gly Tyr Leu Val Leu
 195 200 205
 Gln Pro Phe Leu Ser Pro Ala Val Phe Gly Ser Val Phe Gly Val Ile
 210 215 220
 Ala Gly Val Met Val Phe Leu Ala Leu Asp Glu Leu Xaa Pro Ala Ala
 225 230 235 240
 Lys Arg Tyr Ser Asp Gly His Glu Thr Val Tyr Gly Leu Thr Thr Gly
 245 250 255
 Met Ala Val Ile Ala Val Ser Leu Val Leu Phe His Phe
 260 265

<210> 2707
 <211> 810
 <212> DNA
 <213> Neisseria meningitidis

<400> 2707
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 ttgtcgtttg gtttggcatt tgccggcggg gcgatggtgt atgtttccct gacggagatt 180
 ttcagtaagt ccagcgaggc gttcgctgaa atttatgata aagaccacgc gtttgcggcg 240
 gcgaccatgg cattttttggc agggatgggc ggcattgcgc tgattgaccg tctggtgccg 300
 aaccgcgatg aaactttaga cgcgcaagac ccgtcgtttc aagaaagcaa acgcccgcatt 360
 atcgcgcgag tcggcatgat ggcggcggtt gcgattactg cgcacaattt ccccgaaggc 420
 ttggcgacgt tttttgccac attggaaaat ccagcagtcg ggatgccttt ggccttggcg 480
 attgccatcc ataattattc ggagggcatt tccatcgccg cgccggttta ttttgccacc 540
 cgcagccgta agaaaacggt gtgggcgtgt ctgctatccg gcttggccga gccgttgggg 600
 gcggccttgg gctatttggg tttgcagccg tttttgtcgc ctgccgtgtt tgggttcggtg 660
 ttcggcgtga tagccggtgt gatggtgttt ttggcgttgg acgagctgct gccggctgcc 720
 aaacgctatt cagacggcca tgaaaccgtt tacggcctga caatgggcat ggcggtgatt 780
 gccgtcagcc tggtattgtt ccatttttaa 810

<210> 2708
 <211> 269
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2708

Met	Pro	Asp	Phe	Ser	Met	Ser	Asn	Leu	Ala	Val	Ala	Phe	Ser	Ile	Thr
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Leu	Ala	Ala	Gly	Leu	Phe	Thr	Val	Leu	Gly	Ser	Gly	Leu	Val	Met	Phe
			20					25					30		
Ser	Lys	Thr	Pro	Asn	Pro	Arg	Val	Leu	Ser	Phe	Gly	Leu	Ala	Phe	Ala
		35					40					45			
Gly	Gly	Ala	Met	Val	Tyr	Val	Ser	Leu	Thr	Glu	Ile	Phe	Ser	Lys	Ser
	50					55					60				
Ser	Glu	Ala	Phe	Ala	Glu	Ile	Tyr	Asp	Lys	Asp	His	Ala	Phe	Ala	Ala
65					70					75					80
Ala	Thr	Met	Ala	Phe	Leu	Ala	Gly	Met	Gly	Gly	Ile	Ala	Leu	Ile	Asp
				85					90					95	
Arg	Leu	Val	Pro	Asn	Pro	His	Glu	Thr	Leu	Asp	Ala	Gln	Asp	Pro	Ser
			100					105					110		
Phe	Gln	Glu	Ser	Lys	Arg	Arg	His	Ile	Ala	Arg	Val	Gly	Met	Met	Ala
	115						120					125			
Ala	Phe	Ala	Ile	Thr	Ala	His	Asn	Phe	Pro	Glu	Gly	Leu	Ala	Thr	Phe
	130					135					140				
Phe	Ala	Thr	Leu	Glu	Asn	Pro	Ala	Val	Gly	Met	Pro	Leu	Ala	Leu	Ala
145					150					155					160
Ile	Ala	Ile	His	Asn	Ile	Pro	Glu	Gly	Ile	Ser	Ile	Ala	Ala	Pro	Val
			165					170						175	
Tyr	Phe	Ala	Thr	Arg	Ser	Arg	Lys	Lys	Thr	Val	Trp	Ala	Cys	Leu	Leu
			180					185					190		
Ser	Gly	Leu	Ala	Glu	Pro	Leu	Gly	Ala	Ala	Leu	Gly	Tyr	Leu	Val	Leu
	195						200					205			
Gln	Pro	Phe	Leu	Ser	Pro	Ala	Val	Phe	Gly	Ser	Val	Phe	Gly	Val	Ile
	210					215					220				
Ala	Gly	Val	Met	Val	Phe	Leu	Ala	Leu	Asp	Glu	Leu	Leu	Pro	Ala	Ala
225					230					235					240
Lys	Arg	Tyr	Ser	Asp	Gly	His	Glu	Thr	Val	Tyr	Gly	Leu	Thr	Met	Gly
				245					250					255	
Met	Ala	Val	Ile	Ala	Val	Ser	Leu	Val	Leu	Phe	His	Phe			
			260					265							

<210> 2709
 <211> 1089
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2709
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 gCGcgccgca ttgtccaagc ggttgatttc acgCGcgcc tgttcgCGgt cgggcatttc 180
 gccgatgtac cagcctatgt gtttgCGtgC gatgcgcaca ccgacggtct caccataaaa 240
 cCGgtgcatg gCGcggtatg ggttcaaaat ggCGctctg cattctgcca aactcaaggc 300
 aggcggtaaa acgCGgtgtt cggcataatg cttcaaatcg cggaaaaacc acggcctgcc 360
 ttgcgCGccg CGcctatca tgatgcCGtc ggCGcggtt tgtttgagga cggCGgCGgc 420
 tttttgCGgc gaagtgatgt CGcgttgac ccaggCGgg atgttcagac ggcttttgg 480
 ctCGcgatg agttCGtaac gCGcctCGcc tttgtacatt tCGtgCGcg cCGcCGcg 540
 aacgCGaagg gCGgcaatgc CGcaatcttc ggCGattttg gCGacgCGg gcaggttttg 600
 atCGtCGtg tgccaacca aacgggtttt gagggtaacg ggtacgCGc cCGccttgac 660
 caccCGctcc aaaatggCGg caaccagCGg ctCGtcctgc atcagCGcg taccggttg 720
 gacgttgcaC actttcttg cggggcagcc catattgatg tCGatgacct gcgccccgag 780
 tCGacgttg taacgCGcg catCGccat ctgttcgggg tCGtgCGcg caatctgcac 840
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 gagCGtcgga tCGctggcca gcatttcgca caccgCGcaa cctgCGccaa acgccccgaca 960
 gaggCGgCGg aagggtttgt cggcaatgcc CGccatCGgc gcaagtgcga tggggttg 1020
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 attttttaa 1089

<210> 2710
 <211> 361
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2710
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 35 40 45
 Asp Phe Thr Pro Arg Leu Phe Ala Val Gly His Phe Ala Asp Val Pro
 50 55 60
 Ala Tyr Val Phe Ala Cys Asp Ala His Thr Asp Gly Leu Thr Ile Lys
 65 70 75 80
 Arg Val His Gly Ala Asp Val Val Gln Asn Gly Gly Ser Ala Phe Cys
 85 90 95
 Gln Thr Gln Gly Arg Arg Asn Ala Val Phe Gly Ile Met Leu Gln Ile
 100 105 110
 Ala Glu Lys Pro Arg Pro Ala Leu Arg Ala Ala Pro Tyr His Asp Ala
 115 120 125

Val Gly Gly Gly Leu Phe Glu Asp Gly Gly Gly Phe Leu Arg Arg Ser
 130 135 140
 Asp Val Ala Val Asp Pro Gly Arg Asp Val Gln Thr Ala Phe Gly Leu
 145 150 155 160
 Gly Asp Glu Phe Val Thr Arg Leu Ala Phe Val His Leu Arg Ala Arg
 165 170 175
 Ala Pro Val Asn Gly Lys Gly Gly Asn Ala Ala Ile Phe Gly Asp Phe
 180 185 190
 Gly Asp Gly Gly Gln Val Leu Ile Val Val Val Pro Thr Gln Thr Gly
 195 200 205
 Phe Glu Gly Asn Gly Tyr Ala Arg Arg Leu Asp His Arg Leu Gln Asn
 210 215 220
 Gly Gly Asn Gln Arg Leu Val Leu His Gln Arg Ala Thr Gly Leu Asp
 225 230 235 240
 Val Ala His Phe Leu Gly Gly Ala Ala His Ile Asp Val Asp Asp Leu
 245 250 255
 Arg Pro Glu Ser Asp Val Val Thr Arg Arg Ile Arg His Leu Phe Gly
 260 265 270
 Val Ala Ala Gly Asn Leu His Gly Asn Asp Ala Ala Phe Ile Gly Lys
 275 280 285
 Ile Thr Ala Val Gln Gly Phe Ser Gly Ile Pro Glu Arg Arg Ile Ala
 290 295 300
 Gly Gln His Phe Ala His Arg Pro Thr Cys Ala Lys Arg Pro Thr Glu
 305 310 315 320
 Ala Ala Glu Gly Phe Val Gly Asn Ala Arg His Arg Arg Lys Cys Asp
 325 330 335
 Gly Val Val Asp Lys Ile Thr Ala Asp Val His Asn Gly Pro Ala Phe
 340 345 350
 Gln Lys Ser Ala Pro Leu Tyr Ile Phe
 355 360

<210> 2711

<211> 1083

<212> DNA

<213> Neisseria meningitidis

<400> 2711

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 cgcactgtcc aagcggttga tttcacgacg tgtctgttcg ccgtcgggca tttcgtcgat 180
 gtaccagcct atgtgtttgc gtgcgatgcg cacaccggcg gtgtcgcgcgt aaaacgcgtg 240

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tatggcgcgg atgtgggttca aaatagcggc ggcgcatctt gccaaactca aggcaggcgg 300
caaaacaccg tgttcggcat aatgtttcaa atcgcggaag aaccacggcc tgccttgccg 360
gccgcgccct atcataatgc cgtcggcggc ggtttgtttg aggacggctt gggctttttg 420
cggcgaagta atgtcgccgt tgaccagac cgggatgttc agacggcatt tggtttcggc 480
gatgagttcg taacgcgctt cgcctttgta catTTgcgta cgcgtgcgtc cgtggacggc 540
aaggcgggcg atgccgcaat cttcggcgat tttggcgatg acgggcaggt tttgatggtc 600
gtcgtgccaa cccaaacggg ttttgagggt aacgggtacg cctgccgcac ggacgacggc 660
ttccaaaatg gcggcaacca gcggctcggt ctgcatcagc gcgctaccgg cttggacatt 720
gcagactttt ttagcgggac agcccatgtt gatgtcgata agctgcgccc caaggctgac 780
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gcggaacggg ttgtcggtaa tgcccgccat cggcgcaagt gcgatggggg tgtcgataaa 1020
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taa 1083

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<210> 2712

<211> 360

<212> PRT

<213> *Neisseria meningitidis*

<400> 2712

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Gly Ala Arg Pro Thr Val Gly Phe Phe Gly Lys Ser Phe Lys Ile Thr
                20                      25                      30

```

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Cys Lys His Val Val Leu Arg Arg Arg Thr Val Gln Ala Val Asp Phe
    35                      40                      45

```

```

Thr Thr Cys Leu Phe Ala Val Gly His Phe Val Asp Val Pro Ala Tyr
    50                      55                      60

```

```

Val Phe Ala Cys Asp Ala His Thr Gly Gly Val Ala Val Lys Arg Val
    65                      70                      75                      80

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Tyr Gly Ala Asp Val Val Gln Asn Ser Gly Gly Ala Phe Cys Gln Thr
                85                      90                      95

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```

Gln Gly Arg Arg Gln Asn Thr Val Phe Gly Ile Met Phe Gln Ile Ala
    100                      105                      110

```

```

Glu Glu Pro Arg Pro Ala Leu Arg Ala Ala Pro Tyr His Asn Ala Val
    115                      120                      125

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```

Gly Gly Gly Leu Phe Glu Asp Gly Leu Gly Phe Leu Arg Arg Ser Asn
    130                      135                      140

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```

Val Ala Val Asp Pro Asp Arg Asp Val Gln Thr Ala Phe Gly Phe Gly
    145                      150                      155                      160

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Asp Glu Phe Val Thr Arg Phe Ala Phe Val His Leu Arg Thr Arg Ala
    165                      170                      175

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Ser Val Asp Gly Lys Gly Gly Asp Ala Ala Ile Phe Gly Asp Phe Gly

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180	185	190
Asp Asp Gly Gln Val Leu Met Val Val Val Pro Thr Gln Thr Gly Phe		
195	200	205
Glu Gly Asn Gly Tyr Ala Cys Arg Thr Asp Asp Gly Phe Gln Asn Gly		
210	215	220
Gly Asn Gln Arg Leu Val Leu His Gln Arg Ala Thr Gly Leu Asp Ile		
225	230	235
Ala Asp Phe Phe Ser Gly Thr Ala His Val Asp Val Asp Lys Leu Arg		
245	250	255
Pro Lys Ala Asp Val Val Thr Arg Gly Ile Arg His Leu Leu Arg Ile		
260	265	270
Ala Ser Gly Asn Leu His Gly Asn Asn Ala Ala Phe Ile Gly Lys Ile		
275	280	285
Ala Ala Val Gln Gly Phe Ser Ser Ile Ser Glu Arg Arg Val Ala Gly		
290	295	300
Gln His Phe Ala His Arg Pro Thr Cys Ala Lys Ile Ser Ala Lys Ser		
305	310	315
Ala Glu Arg Phe Val Gly Asn Ala Arg His Arg Arg Lys Cys Asp Gly		
325	330	335
Val Val Asp Lys Ile Ala Ala Asp Val His Asn Gly Ser Ala Phe Gln		
340	345	350
Lys Ser Thr Pro Leu Tyr Ile Phe		
355	360	

<210> 2713
 <211> 1083
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2713
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 cgcactgtcc aagcggttga tttcacgacg tgtctgttcg ccgtcgggca tttcgtcgat 180
 gtaccagcct atgtgtttgc gtgcgatgcg cacaccggcg gtgtcgccgt aaaacgcgtg 240
 catggctcgg atgtggttca aaatagtggc ggtacattct gccaaactca aggcaggcgg 300
 taaaacaccg tgttcggcgt aatgtttcaa atcgcggaag aaccacggtc tgccttgcgc 360
 gcgcgcgcct atcataatgc cgtctgcggc ggtttgtttg aggacggctt gggctttttg 420
 cggcgaggta atgtcgccgt tgacccagac cgggatgttc agacggcatt tggtttcggc 480
 aatcaggtcg taagccgctt cgccttttga catttgcgtg cgcgtgcgtc cgtggacggc 540
 aagggcggca atgccgcaat cttcggcgat tttggcgatg acgggcaggc tttgatggtc 600
 gtcgtgcaa cccaaacggg ttttgagggt aacgggtacg cccgccgctt tgaccaccgc 660
 ctccaaaatg gcggcaacca gcggctcggt ctgcatcagc gcgctaccgg cttggacatt 720
 gcagactttt tttagcgggac agcccatggt gatgtcgata agctgcgcc caaggctgac 780
 gttgtaacgc gcggcatccg ccatctgctg cggatcgctt ccggcaatct gcacggcaac 840
 aatgcgcct tcacgcgcaa aatcgctgcg gtgcaagggt tttctagtat ttctgagcgt 900

Asp Phe Phe Ser Gly Thr Ala His Val Asp Val Asp Lys Leu Arg Pro
 245 250 255
 Lys Ala Asp Val Val Thr Arg Gly Ile Arg His Leu Leu Arg Ile Ala
 260 265 270
 Ser Gly Asn Leu His Gly Asn Asn Ala Ala Phe Ile Gly Lys Ile Ala
 275 280 285
 Ala Val Gln Gly Phe Ser Ser Ile Ser Glu Arg Arg Val Ala Gly Gln
 290 295 300
 His Phe Ala His Arg Pro Thr Cys Ala Lys Ile Ser Ala Lys Ser Ala
 305 310 315 320
 Glu Arg Phe Val Gly Asn Ala Arg His Arg Arg Lys Cys Asp Gly Val
 325 330 335
 Val Asp Lys Ile Ala Ala Asp Val His Asn Gly Ser Ala Phe Gln Lys
 340 345 350
 Ser Thr Pro Leu Tyr Ile Phe
 355

<210> 2715
 <211> 1578
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2715
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 gaggtggaat tgggtgggtga agaaacggct aaattccggt ttgcgctcaa ccatgccttg 120
 tgccaaacac attttgtttc cggcaagtgt ctgcatgcgg gcgacattaa tcaaatcatg 180
 tccttagcac aaaatgcttt gatcggcagg ggatatacca cgaccggtat cttggctgcg 240
 ccacaggatt tgaatagtgg caagcttcaa ttaaccctga tgccgggcta tctgcgtcc 300
 atacgaatcg atcgggtccaa cgatgatcaa acccatgcag gacgtattgc agcattccaa 360
 aacaaatttc ccaccgctc gaacgatctg ttgaatctgc gtgatttgga acaaggactg 420
 gaaaatctca aatgtctccc gactgcggaa gccgatctcc aaatcgttcc cgtagagaga 480
 gaaccaaac aaagtgatgt cgtggtgcaa tggcggtaac gtctgctgcc ctactgtgtg 540
 agtggtggga tggataattc gggtagttag gcgacaggaa aataccaagg aaatatcact 600
 ttctctgccg acaatccttt tggactgagt gatatgttct atgtaaatta tggacgttca 660
 attggcggta cgcccgatga ggaaaatttt gacggccatc gcaaagaagg cggatcaaac 720
 aattacgccg tacattattc agccctttc ggtaaattgga catgggcatt caatcacaat 780
 ggctaccgtt accatcaggc ggtttccgga ttatcggaag tctatgacta taatggaaaa 840
 agttacaaca ctgatttcgg cttcaaccgc ctgttgtatc gtgatgcaa acgcaaaacc 900
 tatctcagtg taaaactgtg gacgaggga acaaaaagtt acattgatga tgccgaactg 960
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<210> 2716
 <211> 525
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2716
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 35 40 45
 Lys Cys Leu His Ala Gly Asp Ile Asn Gln Ile Met Ser Leu Ala Gln
 50 55 60
 Asn Ala Leu Ile Gly Arg Gly Tyr Thr Thr Thr Arg Ile Leu Ala Ala
 65 70 75 80
 Pro Gln Asp Leu Asn Ser Gly Lys Leu Gln Leu Thr Leu Met Pro Gly
 85 90 95
 Tyr Leu Arg Ser Ile Arg Ile Asp Arg Ser Asn Asp Asp Gln Thr His
 100 105 110
 Ala Gly Arg Ile Ala Ala Phe Gln Asn Lys Phe Pro Thr Arg Ser Asn
 115 120 125
 Asp Leu Leu Asn Leu Arg Asp Leu Glu Gln Gly Leu Glu Asn Leu Lys
 130 135 140
 Cys Leu Pro Thr Ala Glu Ala Asp Leu Gln Ile Val Pro Val Glu Arg
 145 150 155 160
 Glu Pro Asn Gln Ser Asp Val Val Val Gln Trp Arg Xaa Arg Leu Leu
 165 170 175
 Pro Tyr Cys Val Ser Val Gly Met Asp Asn Ser Gly Ser Glu Ala Thr
 180 185 190
 Gly Lys Tyr Gln Gly Asn Ile Thr Phe Ser Ala Asp Asn Pro Phe Gly
 195 200 205
 Leu Ser Asp Met Phe Tyr Val Asn Tyr Gly Arg Ser Ile Gly Gly Thr
 210 215 220
 Pro Asp Glu Glu Asn Phe Asp Gly His Arg Lys Glu Gly Gly Ser Asn
 225 230 235 240
 Asn Tyr Ala Val His Tyr Ser Ala Pro Phe Gly Lys Trp Thr Trp Ala
 245 250 255

Phe Asn His Asn Gly Tyr Arg Tyr His Gln Ala Val Ser Gly Leu Ser
260 265 270
Glu Val Tyr Asp Tyr Asn Gly Lys Ser Tyr Asn Thr Asp Phe Gly Phe
275 280 285
Asn Arg Leu Leu Tyr Arg Asp Ala Lys Arg Lys Thr Tyr Leu Ser Val
290 295 300
Lys Leu Trp Thr Arg Glu Thr Lys Ser Tyr Ile Asp Asp Ala Glu Leu
305 310 315 320
Thr Val Gln Arg Arg Lys Thr Thr Gly Trp Leu Ala Glu Leu Ser His
325 330 335
Lys Gly Tyr Ile Gly Arg Ser Thr Ala Asp Phe Lys Leu Lys Tyr Lys
340 345 350
His Gly Thr Gly Met Lys Asp Ala Leu Arg Ala Pro Glu Glu Ala Phe
355 360 365
Gly Glu Gly Thr Ser Arg Met Lys Ile Trp Thr Ala Ser Ala Asp Val
370 375 380
Asn Thr Pro Phe Gln Ile Gly Lys Gln Leu Phe Ala Tyr Asp Thr Ser
385 390 395 400
Val His Ala Gln Trp Asn Lys Thr Pro Leu Thr Ser Gln Asp Lys Leu
405 410 415
Ala Ile Gly Gly His His Thr Val Arg Gly Phe Asp Gly Glu Met Ser
420 425 430
Leu Pro Ala Glu Arg Gly Trp Tyr Trp Arg Asn Asp Leu Ser Trp Gln
435 440 445
Phe Lys Pro Gly His Gln Leu Tyr Leu Gly Ala Asp Val Gly His Val
450 455 460
Ser Gly Gln Ser Ala Lys Trp Leu Ser Gly Gln Thr Leu Ala Gly Thr
465 470 475 480
Ala Ile Gly Ile Arg Gly Gln Ile Lys Leu Gly Gly Asn Leu His Tyr
485 490 495
Asp Ile Phe Thr Gly Arg Ala Leu Lys Lys Pro Glu Tyr Phe Gln Thr
500 505 510
Lys Lys Trp Val Thr Gly Phe Gln Val Gly Tyr Ser Phe
515 520 525

<210> 2717

<211> 1644

<212> DNA

<213> Neisseria meningitidis

<400> 2717

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aattacatta gtttagatga taagacgggtg cgcaaatTTT cttttcttcc ttctgtgctc 180
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<210> 2718

<211> 547

<212> PRT

<213> *Neisseria meningitidis*

<400> 2718

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Val Arg Phe Glu Gln Pro Leu Glu Lys Asn Asn Tyr Val Leu Ser Glu
      20              25              30

Asp Glu Thr Pro Cys Thr Arg Val Asn Tyr Ile Ser Leu Asp Asp Lys
      35              40              45

Thr Val Arg Lys Phe Ser Phe Leu Pro Ser Val Leu Met Lys Glu Thr
      50              55              60

Ala Phe Lys Thr Gly Met Cys Leu Gly Ser Asn Asn Leu Ser Arg Leu
      65              70              75              80

Gln Lys Ala Ala Gln Gln Ile Leu Ile Val Arg Gly Tyr Leu Thr Ser
      85              90              95

Gln Ala Ile Ile Gln Pro Gln Asn Met Asp Ser Gly Ile Leu Lys Leu
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100							105					110				
Arg	Val	Ser	Ala	Gly	Glu	Ile	Gly	Asp	Ile	Arg	Tyr	Glu	Glu	Lys	Arg	
		115					120					125				
Asp	Gly	Lys	Ser	Ala	Glu	Gly	Ser	Ile	Ser	Ala	Phe	Asn	Asn	Lys	Phe	
		130					135					140				
Pro	Leu	Tyr	Arg	Asn	Lys	Ile	Leu	Asn	Leu	Arg	Asp	Val	Glu	Gln	Gly	
		145					150					155				
Leu	Glu	Asn	Leu	Arg	Arg	Leu	Pro	Ser	Val	Lys	Thr	Asp	Ile	Gln	Ile	
						165					170					
Ile	Pro	Ser	Glu	Glu	Glu	Gly	Lys	Ser	Asp	Leu	Gln	Ile	Lys	Trp	Gln	
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Gln	Asn	Lys	Pro	Ile	Arg	Phe	Ser	Ile	Gly	Ile	Asp	Asp	Ala	Gly	Gly	
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Lys	Thr	Thr	Gly	Lys	Tyr	Gln	Gly	Asn	Val	Ala	Leu	Ser	Phe	Asp	Asn	
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Pro	Leu	Gly	Leu	Ser	Asp	Leu	Phe	Tyr	Val	Ser	Tyr	Gly	Arg	Gly	Leu	
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Ala	His	Lys	Thr	Asp	Leu	Thr	Asp	Ala	Thr	Gly	Thr	Glu	Thr	Glu	Ser	
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Gly	Ser	Arg	Ser	Tyr	Ser	Val	His	Tyr	Ser	Val	Pro	Val	Lys	Lys	Trp	
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Val	Gly	Met	Lys	Leu	Trp	Thr	Arg	Gln	Thr	Tyr	Lys	Tyr	Ile	Asp	Asp	
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Ala	Glu	Ile	Glu	Val	Gln	Arg	Arg	Arg	Ser	Ala	Gly	Trp	Glu	Ala	Glu	
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Leu	Arg	His	Arg	Ala	Tyr	Leu	Asn	Arg	Trp	Gln	Leu	Asp	Gly	Lys	Leu	
		355					360					365				
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Thr	Ala	Ser	Leu	Asp	Ala	Ala	Ala	Pro	Phe	Xaa	Leu	Gly	Lys	Gln	Glu	

405	410	415
Phe Phe Tyr Ala Thr Ala Ile Gln	Ala Gln Trp Asn Lys Thr Pro Leu	
420	425	430
Val Ala Gln Asp Lys Leu Ser Ile Gly Ser Arg Tyr Thr Val Arg Gly		
435	440	445
Phe Asp Gly Glu Gln Ser Leu Phe Gly Glu Arg Gly Phe Tyr Trp Gln		
450	455	460
Asn Thr Leu Thr Trp Tyr Phe His Pro Asn His Gln Phe Tyr Leu Gly		
465	470	475
Ala Asp Tyr Gly Arg Val Ser Gly Glu Ser Ala Gln Tyr Val Ser Gly		
485	490	495
Lys Gln Leu Met Gly Ala Val Val Gly Phe Arg Gly Gly His Lys Val		
500	505	510
Gly Gly Met Phe Ala Tyr Asp Leu Phe Ala Gly Lys Pro Leu His Lys		
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Tyr Ser Phe		
545		

<210> 2719

<211> 1644

<212> DNA

<213> *Neisseria meningitidis*

<400> 2719

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aattacatta gtttagatga taagacggcg cgcaaatttt cttttcttcc ttctgtgctc 180
atgaaagaaa cagcttttaa aactgggatg tgttttaggtt ccaataattt gagcaggcta 240
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<210> 2720

<211> 547

<212> PRT

<213> *Neisseria meningitidis*

<400> 2720

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Met Gln Arg Gln Gln His Ile Asp Ala Glu Leu Leu Thr Asp Ala Asn
  1              5              10              15

Val Arg Phe Glu Gln Pro Leu Glu Lys Asn Asn Tyr Val Leu Ser Glu
      20              25              30

Asp Glu Thr Pro Cys Thr Arg Val Asn Tyr Ile Ser Leu Asp Asp Lys
      35              40              45

Thr Ala Arg Lys Phe Ser Phe Leu Pro Ser Val Leu Met Lys Glu Thr
      50              55              60

Ala Phe Lys Thr Gly Met Cys Leu Gly Ser Asn Asn Leu Ser Arg Leu
      65              70              75              80

Gln Lys Ala Ala Gln Gln Ile Leu Ile Val Arg Gly Tyr Leu Thr Ser
      85              90              95

Gln Ala Ile Ile Gln Pro Gln Asn Met Asp Ser Gly Ile Leu Lys Leu
      100             105             110

Arg Val Ser Ala Gly Glu Ile Gly Asp Ile Arg Tyr Glu Glu Lys Arg
      115             120             125

Asp Gly Lys Ser Ala Glu Gly Ser Ile Ser Ala Phe Asn Asn Lys Phe
      130             135             140

Pro Leu Tyr Arg Asn Lys Ile Leu Asn Leu Arg Asp Val Glu Gln Gly
      145             150             155             160

Leu Glu Asn Leu Arg Arg Leu Pro Ser Val Lys Thr Asp Ile Gln Ile
      165             170             175

Ile Pro Ser Glu Glu Glu Gly Lys Ser Asp Leu Gln Ile Lys Trp Gln
      180             185             190

Gln Asn Lys Pro Ile Arg Phe Ser Ile Gly Ile Asp Asp Ala Gly Gly
      195             200             205

Lys Thr Thr Gly Lys Tyr Gln Gly Asn Val Ala Leu Ser Phe Asp Asn
      210             215             220

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Pro Leu Gly Leu Ser Asp Leu Phe Tyr Val Ser Tyr Gly Arg Gly Leu
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 Val His Lys Thr Asp Leu Thr Asp Ala Thr Gly Thr Glu Thr Glu Ser
 245 250 255
 Gly Ser Arg Ser Tyr Ser Val His Tyr Ser Val Pro Val Lys Lys Trp
 260 265 270
 Leu Phe Ser Phe Asn His Asn Gly His Arg Tyr His Glu Ala Thr Glu
 275 280 285
 Gly Tyr Ser Val Asn Tyr Asp Tyr Asn Gly Lys Gln Tyr Gln Ser Ser
 290 295 300
 Leu Ala Ala Glu Arg Met Leu Trp Arg Asn Arg Phe His Lys Thr Ser
 305 310 315 320
 Val Gly Met Lys Leu Trp Thr Arg Gln Thr Tyr Lys Tyr Ile Asp Asp
 325 330 335
 Ala Glu Ile Glu Val Gln Arg Arg Arg Ser Ala Gly Trp Glu Ala Glu
 340 345 350
 Leu Arg His Arg Ala Tyr Leu Asn Arg Trp Gln Leu Asp Gly Lys Leu
 355 360 365
 Ser Tyr Lys Arg Gly Thr Gly Met Arg Gln Ser Met Pro Ala Pro Glu
 370 375 380
 Glu Asn Gly Gly Gly Thr Ile Pro Gly Thr Ser Arg Met Lys Ile Ile
 385 390 395 400
 Thr Ala Gly Leu Asp Ala Ala Ala Pro Phe Met Leu Gly Lys Gln Gln
 405 410 415
 Phe Phe Tyr Ala Thr Ala Ile Gln Ala Gln Trp Asn Lys Thr Pro Leu
 420 425 430
 Val Ala Gln Asp Lys Leu Ser Ile Gly Ser Arg Tyr Thr Val Xaa Gly
 435 440 445
 Phe Asp Gly Glu Gln Ser Leu Phe Gly Glu Arg Gly Phe Tyr Trp Gln
 450 455 460
 Asn Thr Leu Thr Trp Tyr Phe His Pro Asn His Gln Phe Tyr Leu Gly
 465 470 475 480
 Ala Asp Tyr Gly Arg Val Ser Gly Glu Ser Ala Gln Tyr Val Ser Gly
 485 490 495
 Lys Gln Leu Met Gly Ala Val Val Gly Phe Arg Gly Gly His Lys Val
 500 505 510
 Gly Gly Met Phe Ala Tyr Asp Leu Phe Ala Gly Lys Pro Leu His Lys
 515 520 525

Pro Lys Gly Phe Gln Thr Thr Asn Thr Val Tyr Gly Phe Asn Leu Asn
 530 535 540

Tyr Ser Phe
 545

<210> 2721
 <211> 1311
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2721
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 gcttttcacg ccgacagtcg attcgcgcca gccgggcatg gtttcgtaaa tcggtttgca 180
 ggtttccacc gcacccgaac cgcaaggcag gatgtcgggt ttgccgccgc ctggcaattc 240
 gtaccgacg cagatattga tggtttcaac gccgtccatt acatcgagtt tggtaatgca 300
 cataccggaa atgccgttga tttggatgga gcgtttcagg gcggcgcatg caaaccagcc 360
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 gcctaattcg tcgaacaatt cggtcgggaa cgggcccgaa ccgacgcgcg tggatataggc 480
 tttgacgatg cccaaaacat aatccagcat ttgaggacct acgcccgccg ctgccgaagc 540
 cgcgccggcg agacagttgg acgaggtaac gaaggggtaa gtgccgtagt cgatgtccaa 600
 caacgcacct tgccgcgctt caaacagcag ttttcgccc tttttgtttt tttcgttcaa 660
 cagcggggac acgtcggcaa tcacggcgcc aatgcgcggc gcgacttttt cgataaccgc 720
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 gccggcttct tccgccagcc agtcaacgat tttaccttta cctcgtcgc cccactgtgc 1260
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<210> 2722
 <211> 436
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2722
 Met Met Gln His Asn Arg Phe Phe Ala Val Gly Ala Gly Gly Asp Asp
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 Gly Asp Arg Arg Ala Ala Asp Phe Phe Asn Pro Phe Gln Ile Cys Phe
 20 25 30
 Gly Ile Gly Arg Gln Cys Val Val Ala Phe His Ala Asp Ser Arg Phe
 35 40 45
 Ala Pro Ala Gly His Gly Phe Val Asn Arg Phe Ala Gly Phe His Arg
 50 55 60
 Ile Arg Thr Ala Arg Gln Asp Val Gly Phe Ala Ala Ala Trp Gln Phe

65	70	75	80
Val Ala Asp Ala Asp	Ile Asp Gly Phe Asn Ala Val His Tyr Ile Glu		
85	90	95	
Phe Gly Asn Ala His Thr Gly Asn Ala Val Asp Leu Asp Gly Ala Phe			
100	105	110	
Gln Gly Gly Gly Ile Lys Pro Ala Ala Ala Ala Arg Ala Ala Gly Tyr			
115	120	125	
Arg Thr Glu Phe Val Ser Ala Leu Arg Gln Thr Cys Ala Tyr Phe Val			
130	135	140	
Glu Gln Phe Gly Arg Glu Arg Ala Arg Thr Asp Ala Arg Gly Ile Gly			
145	150	155	160
Phe Asp Asp Ala Gln Asn Ile Ile Gln His Leu Arg Thr Tyr Ala Arg			
165	170	175	
Ala Cys Arg Ser Arg Ala Gly Glu Thr Val Gly Arg Gly Asn Glu Gly			
180	185	190	
Val Ser Ala Val Val Asp Val Gln Gln Arg Thr Leu Arg Ala Phe Lys			
195	200	205	
Gln Gln Phe Phe Ala Val Phe Val Phe Phe Val Gln His Ala Gly His			
210	215	220	
Val Gly Asn His Arg Arg Asn Ala Arg Arg Asp Phe Phe Asp Asn Arg			
225	230	235	240
His His Val Phe Arg Phe Asn Arg Ser Gly Val Met Gln Val Leu Glu			
245	250	255	
Leu Asp Val Val Ile Gly Lys Asp Gly Ile Gln Phe Phe Thr Gln Phe			
260	265	270	
Phe Arg Met Gln Gln Ile Gly Gly Ala Asn Gly Ala Ala Cys His Phe			
275	280	285	
Val Phe Val Gly Arg Ala Asp Ala Ala Ala Gly Arg Ala Asp Phe Ala			
290	295	300	
Phe Ala Ala Arg Cys Phe Ala Gly Leu Val Glu Arg Asp Val Val Arg			
305	310	315	320
Gln Asp Gln Arg Ala Gly Arg Arg Asp Phe Gln Thr Ala Phe Asp Val			
325	330	335	
Phe His Ala Cys Arg Val Gln Leu Val Asp Phe Ala Gln Gln Gly Phe			
340	345	350	
Gly Gly Asn Asp Asn Ala Arg Thr Asp Glu Ala Ile Gln Ser Phe Val			
355	360	365	
Gln Asp Thr Ala Arg Asn Gln Ala Gln Asn Gly Phe Phe Ala Ala Asp			

370 375 380
 Asp Gln Gly Met Ala Arg Ile Val Ala Ala Leu Glu Ala His Asp Ala
 385 390 395 400
 Ala Gly Phe Phe Arg Gln Pro Val Asn Asp Phe Thr Phe Thr Leu Val
 405 410 415
 Ala Pro Leu Cys Ala Asp Tyr Tyr Asn Ile Phe Ser His Ser His Ile
 420 425 430
 Thr Tyr Arg Tyr
 435

<210> 2723
 <211> 1310
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2723
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 gtccttcacg ccgaaagtgg attcgcgccg gccgggcatg gtttcgtaaa tcggcttgca 180
 ggtttccacc gcatcggaac cgcaaggcag gatgtcggtt ttgccgccgt cgggcaattc 240
 atagccgacg cagatattga tggtttcaac gccgtccatt acatcgagtt tagtaataca 300
 cataccggaa atgccgttga ttggatgga gcgtttcagg gcggcgcat caaaccagcc 360
 gcagcggcgt gcgcgtccgg ttaccgaacc gaattcgtgt ccgcgttctg ccaaacctac 420
 gctacttcg tcgaacaatt cggtcgggaa cgggcccgaa ccgacgcgcg tggatataggc 480
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 catcacgtct tccgttttaa ccggtcggc attgtgcaga tgttgagtt ggacattgta 780
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 ttgccgccga caaccaagg atggcccgca ttgtggccgc cttggaagcg caccacgcc 1200
 ccggcttctt ccgccagcca gtcaacgatt ttacctttac cctcgtcgc ccactgtgcg 1260
 ccgattasta caacattttt agccatagcc atataacctc tcgatattaa 1310

<210> 2724
 <211> 436
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2724
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 Gly Asp Arg Arg Ala Ala Asp Phe Phe Asn Pro Phe Gln Ile Cys Phe
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Gly Val Phe Gly Gln Cys Ala Val Val Leu His Ala Glu Ser Gly Phe
 35 40 45
 Ala Pro Ala Gly His Gly Phe Val Asn Arg Leu Ala Gly Phe His Arg
 50 55 60
 Ile Gly Thr Ala Arg Gln Asp Val Gly Phe Ala Ala Val Gly Gln Phe
 65 70 75 80
 Ile Ala Asp Ala Asp Ile Asp Gly Phe Asn Ala Val His Tyr Ile Glu
 85 90 95
 Phe Ser Asn Thr His Thr Gly Asn Ala Val Asp Leu Asp Gly Ala Phe
 100 105 110
 Gln Gly Gly Gly Ile Lys Pro Ala Ala Ala Ala Cys Ala Ser Gly Tyr
 115 120 125
 Arg Thr Glu Phe Val Ser Ala Phe Cys Gln Thr Tyr Ala Tyr Phe Val
 130 135 140
 Glu Gln Phe Gly Arg Glu Arg Ala Arg Thr Asp Ala Arg Gly Ile Gly
 145 150 155 160
 Phe Asp Asp Ala Gln Asn Ile Ile Gln His Leu Arg Thr Tyr Ala Arg
 165 170 175
 Ala Cys Arg Ser Cys Ala Arg Gln Thr Val Gly Arg Gly Asn Glu Gly
 180 185 190
 Ile Ser Ala Val Val Asp Val Gln Gln Arg Thr Leu Arg Ala Phe Lys
 195 200 205
 Gln Gln Phe Phe Ala Val Phe Val Phe Leu Val Gln His Ala Gly His
 210 215 220
 Val Gly Asn His Arg Arg Asn Ala Arg Arg Asp Phe Phe Asp Asn Arg
 225 230 235 240
 His His Val Phe Arg Phe Asn Arg Leu Gly Ile Val Gln Met Leu Gln
 245 250 255
 Leu Asp Ile Val Ile Gly Lys Asp Gly Ile Gln Phe Phe Thr Gln Phe
 260 265 270
 Xaa Arg Met Gln Gln Ile Gly Gly Ala Asn Gly Ala Ala Cys His Phe
 275 280 285
 Val Phe Val Gly Arg Ala Asp Ala Ala Ala Gly Arg Ala Asp Phe Ala
 290 295 300
 Phe Ala Ala Xaa Ile Phe Ala Gly Leu Val Glu Arg Asp Val Val Arg
 305 310 315 320
 Gln Asp Gln Arg Ala Gly Arg Arg Asp Phe Gln Thr Ala Phe Asp Val
 325 330 335

Phe His Ala Cys Arg Val Gln Leu Val Asp Phe Ala Gln Gln Gly Phe
 340 345 350

Gly Gly Asp Asp Asn Ala Arg Thr Asp Glu Ala Val Gln Thr Phe Met
 355 360 365

Gln Asp Ala Ala Arg Asn Gln Ala Gln Asn Gly Phe Phe Ala Ala Asp
 370 375 380

Asn Gln Gly Met Ala Arg Ile Val Ala Ala Leu Glu Ala His His Ala
 385 390 395 400

Ala Gly Phe Phe Arg Gln Pro Val Asn Asp Phe Thr Phe Thr Leu Val
 405 410 415

Ala Pro Leu Cys Ala Asp Xaa Tyr Asn Ile Phe Ser His Ser His Ile
 420 425 430

Thr Tyr Arg Tyr
 435

<210> 2725
 <211> 1310
 <212> DNA
 <213> Neisseria meningitidis

<400> 2725
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 ggcttctacc gcatcagagc cgcaaggcag gatgtcggtt ttgccgcgt cgggcaattc 240
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 gcagcggcgt ggcgtccgg ttaccgaacc gaattcgtgt ccgcgttctg ccaaacctgc 420
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 catcacgtct tccgctttca ccgactcggc attgtgcaga tgttcagtt ggacgttgta 780
 ataagcaaag acggcatcca gtttttcacg cagtttttca ggatgcagca aatcggcggc 840
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 gatgaagcag tccagacttt catgcaggat gccgctcgga atcaggcgca aaatggtttt 1140
 tttgccgcgc acaaccaagg tatgaccgcg attgtggccg ccttgaagc gcaccacgcc 1200
 tccggttct tccgccagcc agteaacgat ttaccttta ccctcgtcgc cccactgtgc 1260
 gccgattact acaacatttt tagccatagc catataacct tcgatattaa 1310

<210> 2726
 <211> 435
 <212> PRT
 <213> Neisseria meningitidis

<400> 2726

Met	Met	Gln	His	Asn	Arg	Phe	Phe	Ala	Val	Gly	Ala	Gly	Gly	Asp	Asp
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Gly	Asp	Arg	Arg	Thr	Ala	Asp	Phe	Phe	Asn	Pro	Phe	Gln	Ile	Cys	Phe
		20					25						30		
Gly	Ile	Gly	Arg	Cys	Val	Val	Ala	Phe	His	Ala	Glu	Ser	Gly	Phe	Ala
		35					40					45			
Pro	Thr	Gly	His	Gly	Phe	Val	Asn	Arg	Leu	Ala	Gly	Phe	Tyr	Arg	Ile
	50					55					60				
Arg	Ala	Ala	Arg	Gln	Asp	Val	Gly	Phe	Ala	Ala	Val	Gly	Gln	Phe	Val
	65					70					75				80
Ala	Asp	Ala	Asp	Ile	Asp	Gly	Phe	Asn	Ala	Val	His	Tyr	Ile	Glu	Phe
				85					90					95	
Gly	Asn	Thr	His	Thr	Gly	Asn	Ala	Val	Asp	Leu	Asp	Gly	Ala	Phe	Gln
			100					105					110		
Gly	Gly	Gly	Ile	Lys	Pro	Ala	Ala	Ala	Ala	Cys	Ala	Ser	Gly	Tyr	Arg
		115					120					125			
Thr	Glu	Phe	Val	Ser	Ala	Phe	Cys	Gln	Thr	Cys	Ser	Asp	Phe	Val	Glu
	130					135					140				
Gln	Phe	Gly	Arg	Glu	Arg	Ala	Arg	Thr	Asp	Ala	Arg	Gly	Ile	Gly	Phe
145					150					155					160
Asp	Asp	Ala	Gln	Asn	Ile	Ile	Gln	His	Leu	Arg	Ala	Tyr	Ala	Arg	Ala
				165					170					175	
Cys	Arg	Ser	Arg	Ala	Gly	Glu	Ala	Val	Gly	Arg	Ser	Asn	Glu	Gly	Val
			180					185					190		
Ser	Ala	Val	Val	Asp	Val	Gln	Gln	Arg	Thr	Leu	Arg	Ala	Phe	Lys	Gln
		195					200					205			
Gln	Phe	Phe	Ala	Val	Phe	Val	Phe	Phe	Val	Gln	His	Ala	Gly	His	Val
	210					215					220				
Gly	Asn	His	Arg	Arg	Asn	Ala	Arg	Arg	Asp	Phe	Phe	Asp	Asn	Arg	His
225					230					235					240
His	Val	Phe	Arg	Phe	His	Arg	Leu	Gly	Ile	Val	Gln	Met	Leu	Gln	Leu
				245					250					255	
Asp	Val	Val	Ile	Ser	Lys	Asp	Gly	Ile	Gln	Phe	Phe	Thr	Gln	Phe	Phe
			260					265					270		
Arg	Met	Gln	Gln	Ile	Gly	Gly	Ala	Asn	Gly	Ala	Ala	Cys	His	Phe	Val
		275					280					285			
Phe	Val	Gly	Arg	Ala	Asp	Ala	Ala	Ala	Gly	Arg	Ala	Asp	Phe	Ala	Phe

290	295	300
Ala Ala Arg Cys Phe Ser Gly Leu Val Glu Arg Asp Val Ile Arg Gln		
305	310	315 320
Asp Gln Arg Ala Gly Arg Arg Asp Phe Gln Thr Ala Phe Asp Val Phe		
	325	330 335
His Ala Cys Arg Val Gln Leu Val Asp Phe Ala Gln Gln Gly Phe Gly		
	340	345 350
Gly Asp Asp Asn Ala Arg Thr Asp Glu Ala Val Gln Thr Phe Met Gln		
	355	360 365
Asp Ala Ala Arg Asn Gln Ala Gln Asn Gly Phe Phe Ala Ala Asp Asn		
	370	375 380
Gln Gly Met Thr Arg Ile Val Ala Ala Leu Glu Ala His His Ala Ser		
	385	390 395 400
Gly Phe Phe Arg Gln Pro Val Asn Asp Phe Thr Phe Thr Leu Val Ala		
	405	410 415
Pro Leu Cys Ala Asp Tyr Tyr Asn Ile Phe Ser His Ser His Ile Thr		
	420	425 430
Xaa Arg Tyr		
435		

<210> 2727

<211> 339

<212> DNA

<213> Neisseria meningitidis

<400> 2727

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tttaaaccaa atccgtggga cgccgcgtca ttttgggaat tgaaaaatta cgccaatccc 120
tatccgggat cagcctcggc ggcacttgac caatatccat cgaaagcaag acgaaggcaa 180
ctgaaagaca tgcaagagtg cggtatgac ccaatagacg gcggaagtc tgaagcagat 240
gcctgcctga ggaaaaaagg ctggtgtcgt aagggtttcg acccttatcc cgaaaacaaa 300
aaatacgaat ggctcgaga agaaggaaaa acaaaatga 339

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<210> 2728

<211> 112

<212> PRT

<213> Neisseria meningitidis

<400> 2728

Met Lys Tyr Ile Val Ser Ile Ser Leu Ala Met Gly Leu Ala Ala Cys
1 5 10 15
Ser Phe Gly Gly Phe Lys Pro Asn Pro Trp Asp Ala Ala Ser Phe Trp
20 25 30

Glu Leu Lys Asn Tyr Ala Asn Pro Tyr Pro Gly Ser Ala Ser Ala Ala

35	40	45
Leu Asp Gln Tyr Pro Ser Lys Ala Arg Arg Arg Gln Leu Lys Asp Met		
50	55	60
Gln Glu Cys Gly Tyr Asp Pro Ile Asp Gly Gly Lys Ser Glu Ala Asp		
65	70	75
Ala Cys Leu Arg Lys Lys Gly Trp Cys Arg Lys Gly Phe Asp Pro Tyr		
	85	90
Pro Glu Asn Lys Lys Tyr Glu Trp Pro Arg Glu Glu Gly Lys Thr Lys		
100	105	110

<210> 2729
 <211> 378
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2729
 atgaaaaaac cgaccgatac cctaccggtc aatctgcaac gccgccgcct gctgtgtgcc 60
 gccggcgcgc tgttgatcag cccgctggcg caccgccggc cgcaacgtga agaaacgctt 120
 gccgacgatg tggcttccgt gatgaggagt tctgtcggca gcgtcaatcc gccgaggctg 180
 gtgttcgaca atccgaaaga gggcgaacgt tggttgtccg cgatgtcggc acgtttggca 240
 agattcgtcc ccgacgaggg ggagcggcgc aggtgtctgg tcaatatcca atacgaaagc 300
 agccgggccg gtttgatcac gcagattgtg ttggggctga ttgaagtgga aagcgggtac 360
 cgagctcgaa tcatatca 378

<210> 2730
 <211> 126
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2730
 Met Lys Lys Pro Thr Asp Thr Leu Pro Val Asn Leu Gln Arg Arg Arg
 1 5 10 15
 Leu Leu Cys Ala Ala Gly Ala Leu Leu Ile Ser Pro Leu Ala His Ala
 20 25 30
 Gly Ala Gln Arg Glu Glu Thr Leu Ala Asp Asp Val Ala Ser Val Met
 35 40 45
 Arg Ser Ser Val Gly Ser Val Asn Pro Pro Arg Leu Val Phe Asp Asn
 50 55 60
 Pro Lys Glu Gly Glu Arg Trp Leu Ser Ala Met Ser Ala Arg Leu Ala
 65 70 75 80
 Arg Phe Val Pro Asp Glu Gly Glu Arg Arg Arg Leu Leu Val Asn Ile
 85 90 95

Gln Tyr Glu Ser Ser Arg Ala Gly Leu Asp Thr Gln Ile Val Leu Gly
 100 105 110

Leu Ile Glu Val Glu Ser Gly Tyr Arg Ala Arg Ile Ile Ser
 115 120 125

<210> 2731

<211> 624

<212> DNA

<213> Neillia sinensis

<400> 2731

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 gccggtgcgt tgttgctcag tcctctggcg cacgccggcg cgcaacgtga ggaaacgctt 120
 gccgacgatg tggtttccgt gatgaggagt tctgtcggca gcgtcaatcc gccgaggctg 180
 gtgtttgaca atccgaaaga gggcgagcgt tggttgtctg ccatgtcggc acgtttggca 240
 aggttcgtcc ccgaggagga ggagcggcgc aggtctgctg tcaatatcca gtacgaaagc 300
 agccggggccg gtttgatac gcagattgtg ttggggctga ttgaggtgga aagcgcgttc 360
 cgccagtatg caatcagcgg tgtcggcgcg cgcggcctga tgcaggttat gccgttktgg 420
 aaaaactaca tcggcaaacc ggcgcacaac ctgttcgaca tccgcaccaa cctgcgttac 480
 ggctgtacca tcctgcgcca ttaccggaat cttgaaaaag gcaacatcgt ccgcgcgctt 540
 gcccgcttta acggcagctt gggcagcaat aaatatccga acgccgtttt gggcgcggtg 600
 cgcaaccgct ggcagtggcg ttga 624

<210> 2732

<211> 207

<212> PRT

<213> Neisseria meningitidis

<400> 2732

Met Arg Lys Pro Thr Asp Thr Leu Pro Val Asn Leu Gln Arg Arg Arg
 1 5 10 15

Leu Leu Cys Ala Ala Gly Ala Leu Leu Leu Ser Pro Leu Ala His Ala
 20 25 30

Gly Ala Gln Arg Glu Glu Thr Leu Ala Asp Asp Val Ala Ser Val Met
 35 40 45

Arg Ser Ser Val Gly Ser Val Asn Pro Pro Arg Leu Val Phe Asp Asn
 50 55 60

Pro Lys Glu Gly Glu Arg Trp Leu Ser Ala Met Ser Ala Arg Leu Ala
 65 70 75 80

Arg Phe Val Pro Glu Glu Glu Glu Arg Arg Arg Leu Leu Val Asn Ile
 85 90 95

Gln Tyr Glu Ser Ser Arg Ala Gly Leu Asp Thr Gln Ile Val Leu Gly
 100 105 110

Leu Ile Glu Val Glu Ser Ala Phe Arg Gln Tyr Ala Ile Ser Gly Val
 115 120 125

Gly Ala Arg Gly Leu Met Gln Val Met Pro Xaa Trp Lys Asn Tyr Ile

130	135	140
Gly Lys Pro Ala His Asn Leu Phe Asp Ile Arg Thr Asn Leu Arg Tyr		
145	150	155 160
Gly Cys Thr Ile Leu Arg His Tyr Arg Asn Leu Glu Lys Gly Asn Ile		
	165	170 175
Val Arg Ala Leu Ala Arg Phe Asn Gly Ser Leu Gly Ser Asn Lys Tyr		
	180	185 190
Pro Asn Ala Val Leu Gly Ala Trp Arg Asn Arg Trp Gln Trp Arg		
	195	200 205

<210> 2733
 <211> 624
 <212> DNA
 <213> Neisseria meningitidis

<400> 2733
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 gccggcgcgc tgttgctcag cccgctggca caagccggcg cgcaacgtga agaaacgctt 120
 gccgacgatg tggcttccgt gatgaggagc tctgtcggca gcataaatcc gccgaggctg 180
 gtgttcgaca atccgaaaga gggcgagcgt tggctgtccg cgatgtctgc tcggttggca 240
 aggttcgtcc ccgatgagga ggagcggcgc aggtctgtgg tcaatatcca gtacgaaagc 300
 agccggggccg gtttgatac gcagattgtg ttggggctga ttgaggtgga aagcgcgttc 360
 cgccagtatg caatcagcgg tgtcggcgcg cgcggcctga tgcaggttat gccgttttgg 420
 aaaaactaca tcggcaaacc ggcgcaaac ctgttcgaca tccgcaccaa cctgcgttac 480
 ggctgtacca tcctgcgcca ttaccggaat cttgaaaaag gcaacatcgt ccgcgcactc 540
 gcccgtttta acggtagcct cggcagcaat aaatatccga acgccgtttt gggcgcgctg 600
 cgcaaccgct ggcagtggcg ttga 624

<210> 2734
 <211> 207
 <212> PRT
 <213> Neisseria meningitidis

<400> 2734
 Met Lys Lys Pro Thr Asp Thr Leu Pro Val Asn Leu Gln Arg Arg Arg
 1 5 10 15
 Leu Leu Cys Ala Ala Gly Ala Leu Leu Leu Ser Pro Leu Ala Gln Ala
 20 25 30
 Gly Ala Gln Arg Glu Glu Thr Leu Ala Asp Asp Val Ala Ser Val Met
 35 40 45
 Arg Ser Ser Val Gly Ser Ile Asn Pro Pro Arg Leu Val Phe Asp Asn
 50 55 60
 Pro Lys Glu Gly Glu Arg Trp Leu Ser Ala Met Ser Ala Arg Leu Ala
 65 70 75 80
 Arg Phe Val Pro Asp Glu Glu Glu Arg Arg Arg Leu Leu Val Asn Ile
 85 90 95

Gln Tyr Glu Ser Ser Arg Ala Gly Leu Asp Thr Gln Ile Val Leu Gly
 100 105 110
 Leu Ile Glu Val Glu Ser Ala Phe Arg Gln Tyr Ala Ile Ser Gly Val
 115 120 125
 Gly Ala Arg Gly Leu Met Gln Val Met Pro Phe Trp Lys Asn Tyr Ile
 130 135 140
 Gly Lys Pro Ala His Asn Leu Phe Asp Ile Arg Thr Asn Leu Arg Tyr
 145 150 155 160
 Gly Cys Thr Ile Leu Arg His Tyr Arg Asn Leu Glu Lys Gly Asn Ile
 165 170 175
 Val Arg Ala Leu Ala Arg Phe Asn Gly Ser Leu Gly Ser Asn Lys Tyr
 180 185 190
 Pro Asn Ala Val Leu Gly Ala Trp Arg Asn Arg Trp Gln Trp Arg
 195 200 205

<210> 2735
 <211> 500
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2735
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 gtgtaactgc aagaacagcg gcagagttgg taggcattaa taaaaatacc gcagcctatg 120
 attttcatcg tttacgatga ctgattttatc aaaacgggtcc gcatttagaa atgtttgatg 180
 gcgaagtaga agcagatgaa agttattttg gcggacaacg caaaggcaaa cgcgggtcgcg 240
 gtgctgccgg taaagtcgcc gtattcggtc ttttgaagcg aaatggtaag gtttatacgg 300
 ttacagtacc gaataactcaa accgctactt tatttctat tatccgtgaa caagtgaac 360
 ctgacagtat tgtttatacag gattgttattc gtagctatga tgtattagat gtgagcgaat 420
 ttagccattt tagcttcgct gaaacttcgt tttcgtatca atcacagcac acattttgcc 480
 gaacgacaaa accatattaa 500

<210> 2736
 <211> 165
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2736
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 1 5 10 15
 Leu Phe Val Ala Gly Val Thr Ala Arg Thr Ala Ala Glu Leu Val Gly
 20 25 30
 Ile Asn Lys Asn Thr Ala Ala Tyr Asp Phe His Arg Leu Arg Leu Ile
 35 40 45
 Tyr Gln Asn Gly Pro His Leu Glu Met Phe Asp Gly Glu Val Glu Ala
 50 55 60

Asp Glu Ser Tyr Phe Gly Gly Gln Arg Lys Gly Lys Arg Gly Arg Gly
 65 70 75 80
 Ala Ala Gly Lys Val Ala Val Phe Gly Leu Leu Lys Arg Asn Gly Lys
 85 90 95
 Val Tyr Thr Val Thr Val Pro Asn Thr Gln Thr Ala Thr Leu Phe Pro
 100 105 110
 Ile Ile Arg Glu Gln Val Lys Pro Asp Ser Ile Val Tyr Thr Asp Cys
 115 120 125
 Tyr Arg Ser Tyr Asp Val Leu Asp Val Ser Glu Phe Ser His Phe Ser
 130 135 140
 Phe Ala Glu Thr Ser Phe Ser Tyr Gln Ser Gln His Thr Phe Cys Arg
 145 150 155 160
 Thr Thr Lys Pro Tyr
 165

<210> 2737
 <211> 501
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2737
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 ggtgtaactg caagaacggc agcagagtta gtaggcgtta ataaaaatac cgcagcctat 120
 tattttcatc gtttacgatt acttatttat caaaacagtc cgcatttgga aatgtttgat 180
 ggcaagtag aagcagatga aagttatttt ggcggacaac gcaaaggcaa acgcggtcgc 240
 ggtgctgccg gtaaagtcgc cgtattcggc cttttgaagc gaaatggtaa ggtttatacg 300
 gttacagtac cgaataactca aaccgctact ttatttecta ttatccgtga acaagtgaag 360
 cctgacagca ttttttatac ggattgttat cgtagctatg atgtattaga tgtgcgcgaa 420
 tttagccatt ttagcttcgc tgaaacttcg ttttcgtatc aatcacagca cacattttgc 480
 cgaacgacaa aaccatatta a 501

<210> 2738
 <211> 166
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2738
 Met Arg Lys Ser Arg Leu Ser Gln Tyr Lys Gln Xaa Lys Leu Ile Glu
 1 5 10 15
 Leu Phe Val Thr Gly Val Thr Ala Arg Thr Ala Ala Glu Leu Val Gly
 20 25 30
 Val Asn Lys Asn Thr Ala Ala Tyr Tyr Phe His Arg Leu Arg Leu Leu
 35 40 45
 Ile Tyr Gln Asn Ser Pro His Leu Glu Met Phe Asp Gly Glu Val Glu
 50 55 60

Ala Asp Glu Ser Tyr Phe Gly Gly Gln Arg Lys Gly Lys Arg Gly Arg
65 70 75 80

Gly Ala Ala Gly Lys Val Ala Val Phe Gly Leu Leu Lys Arg Asn Gly
85 90 95

Lys Val Tyr Thr Val Thr Val Pro Asn Thr Gln Thr Ala Thr Leu Phe
100 105 110

Pro Ile Ile Arg Glu Gln Val Lys Pro Asp Ser Ile Phe Tyr Thr Asp
115 120 125

Cys Tyr Arg Ser Tyr Asp Val Leu Asp Val Arg Glu Phe Ser His Phe
130 135 140

Ser Phe Ala Glu Thr Ser Phe Ser Tyr Gln Ser Gln His Thr Phe Cys
145 150 155 160

Arg Thr Thr Lys Pro Tyr
165

<210> 2739
<211> 501
<212> DNA
<213> Neisseria meningitidis

<400> 2739
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ggtgtaactg caagaacggc agcagagtta gtaggcgtta ataaaaatac cgcagcctat 120
tattttcatc gtttacgatt acttatttat caaacagtc cgcatttgga aatgtttgat 180
ggcgaagtag aagcagatga aagttatttt ggccgacaac gcaaaggcaa acgcggctcg 240
ggtgctgccg gtaaagtcgc cgtattcggg cttttgaagc gaaatggtaa ggtttatacg 300
gttacagtac cgaatactca aaccgctact ttatttccta ttatccgtga acaagtga 360
cctgacagca ttgtttatac ggattgttat cgtagctatg atgtattaga tgtgcgcgaa 420
tttagccatt ttagcttcgc tgaaacttcg ttttcgtatc aatcacagca cacattttgc 480
cgaacgacaa aaccatatta a 501

<210> 2740
<211> 166
<212> PRT
<213> Neisseria meningitidis

<400> 2740
Met Arg Lys Ser Arg Leu Ser Gln Tyr Lys Gln Asn Lys Leu Ile Glu
1 5 10 15

Leu Phe Val Ala Gly Val Thr Ala Arg Thr Ala Ala Glu Leu Val Gly
20 25 30

Val Asn Lys Asn Thr Ala Ala Tyr Tyr Phe His Arg Leu Arg Leu Leu
35 40 45

Ile Tyr Gln Asn Ser Pro His Leu Glu Met Phe Asp Gly Glu Val Glu
50 55 60

Ala Asp Glu Ser Tyr Phe Gly Gly Gln Arg Lys Gly Lys Arg Gly Arg
65 70 75 80

Gly Ala Ala Gly Lys Val Ala Val Phe Gly Leu Leu Lys Arg Asn Gly
85 90 95

Lys Val Tyr Thr Val Thr Val Pro Asn Thr Gln Thr Ala Thr Leu Phe
100 105 110

Pro Ile Ile Arg Glu Gln Val Lys Pro Asp Ser Ile Val Tyr Thr Asp
115 120 125

Cys Tyr Arg Ser Tyr Asp Val Leu Asp Val Arg Glu Phe Ser His Phe
130 135 140

Ser Phe Ala Glu Thr Ser Phe Ser Tyr Gln Ser Gln His Thr Phe Cys
145 150 155 160

Arg Thr Thr Lys Pro Tyr
165

<210> 2741
<211> 327
<212> DNA
<213> Neisseria gonorrhoeae

<400> 2741
atgcgtaaaa ccgtacttat cctgaccatc tccgccgccc ttttgtcggg ctgcacatgg 60
gaaacttata aagacggcag cggcaaaacc gccgtccgtg caaaatgttc caccggcacg 120
ccgctgtgtt ggcaagacgg gcgcggctcg aaaaagggtg actgcgacga gtacgggtggc 180
gaacgccggg ccgtgttgcg caaccaaaag cgggggaagc ccgcgacgag gagagccgca 240
acgtggggga aaccgagttt ccgggcgagg gacggggggg ggcgggtgaa cagggcgaga 300
acggggggagg ggaagcgatc ggcgagg 327

<210> 2742
<211> 109
<212> PRT
<213> Neisseria gonorrhoeae

<400> 2742
Met Arg Lys Thr Val Leu Ile Leu Thr Ile Ser Ala Ala Leu Leu Ser
1 5 10 15

Gly Cys Thr Trp Glu Thr Tyr Gln Asp Gly Ser Gly Lys Thr Ala Val
20 25 30

Arg Ala Lys Cys Ser Thr Gly Thr Pro Leu Cys Trp Gln Asp Gly Arg
35 40 45

Gly Ser Lys Lys Val Asp Cys Asp Glu Tyr Gly Gly Glu Arg Arg Ala
50 55 60

Val Leu Arg Asn Gln Lys Arg Gly Lys Pro Ala Thr Arg Arg Ala Ala
65 70 75 80

Thr Leu Gly Lys Pro Ser Phe Arg Ala Arg Asp Gly Gly Gly Arg Val
85 90 95

Asn Arg Ala Glu Thr Gly Glu Gly Lys Arg Ser Ala Arg
100 105

<210> 2743
<211> 273
<212> DNA
<213> *Neisseria meningitidis*

<400> 2743
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gaaacttatac aagacggcaa cggcaagacc gccgtccgtc aaaaatatcc cgccggcacg 120
cccgtttatt accaagacgg cagctactcg aaaaatatga actacaacca ataccgtccc 180
gaacgccatg ccgtgttacc caatcaaacc ggcaacaacg ccgacgaaga gcatcgccaa 240
cactggcaaa aaccaaagtt tcaaaaccga taa 273

<210> 2744
<211> 90
<212> PRT
<213> *Neisseria meningitidis*

<400> 2744
Met Arg Lys Thr Phe Leu Phe Leu Thr Ala Ala Ala Ala Leu Leu Ser
1 5 10 15
Gly Cys Ala Trp Glu Thr Tyr Gln Asp Gly Asn Gly Lys Thr Ala Val
20 25 30
Arg Gln Lys Tyr Pro Ala Gly Thr Pro Val Tyr Tyr Gln Asp Gly Ser
35 40 45
Tyr Ser Lys Asn Met Asn Tyr Asn Gln Tyr Arg Pro Glu Arg His Ala
50 55 60
Val Leu Pro Asn Gln Thr Gly Asn Asn Ala Asp Glu Glu His Arg Gln
65 70 75 80
His Trp Gln Lys Pro Lys Phe Gln Asn Arg
85 90

<210> 2745
<211> 273
<212> DNA
<213> *Neisseria meningitidis*

<400> 2745
atgcgtaaaa ccttccttat cctgatgact gccgccgccc ttttgtcggg ctgcgcgtgg 60
gaaacttatac aagacggcaa cggcaagacc gccgtccgtc aaaaatatcc cgccggcacg 120
cccgtttatt accaagacgg cagctactcg aaaaatatga actacaacca ataccgtccc 180
gaacgccatg ccgtgttacc caaccaaacc ggcaacaacg ccgacgaaga gcatcgccaa 240
cactggcaaa agcccaaatt tcaaaaccga taa 273

<210> 2746
<211> 90
<212> PRT
<213> *Neisseria meningitidis*

<400> 2746
Met Arg Lys Thr Phe Leu Ile Leu Met Thr Ala Ala Ala Leu Leu Ser
1 5 10 15
Gly Cys Ala Trp Glu Thr Tyr Gln Asp Gly Asn Gly Lys Thr Ala Val
20 25 30
Arg Gln Lys Tyr Pro Ala Gly Thr Pro Val Tyr Tyr Gln Asp Gly Ser
35 40 45
Tyr Ser Lys Asn Met Asn Tyr Asn Gln Tyr Arg Pro Glu Arg His Ala
50 55 60
Val Leu Pro Asn Gln Thr Gly Asn Asn Ala Asp Glu Glu His Arg Gln
65 70 75 80
His Trp Gln Lys Pro Lys Phe Gln Asn Arg
85 90

<210> 2747
<211> 285
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 2747
atgaaaaaac tgttattggc cgcggttggt tcctaaatg ccgcaaccgc atttgccggc 60
gactctgccg agcgtcagat ttacggcgat cccattttg aacaaaaccg cacaaaagcc 120
gtgaaaatgt tggaacagcg cggttatcag gtttacgatg tcgatgccga cgactactgg 180
ggcaaacctg ttttggaagt ggaagcctat aaagacggcc gcgaatacga catcgtgttg 240
tcttaccgcc acctgaaaat catcaaagag cagctcgatc gctga 285

<210> 2748
<211> 94
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 2748
Met Lys Lys Leu Leu Leu Ala Ala Val Val Ser Leu Asn Ala Ala Thr
1 5 10 15
Ala Phe Ala Gly Asp Ser Ala Glu Arg Gln Ile Tyr Gly Asp Pro His
20 25 30
Phe Glu Gln Asn Arg Thr Lys Ala Val Lys Met Leu Glu Gln Arg Gly
35 40 45
Tyr Gln Val Tyr Asp Val Asp Ala Asp Asp Tyr Trp Gly Lys Pro Val

50 55 60
 Leu Glu Val Glu Ala Tyr Lys Asp Gly Arg Glu Tyr Asp Ile Val Leu
 65 70 75 80
 Ser Tyr Pro Asp Leu Lys Ile Ile Lys Glu Gln Leu Asp Arg
 85 90

<210> 2749
 <211> 285
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2749
 atgaaaaaac tggtattggc tgccgttggt tctctgagtg ccgctgccgc atttgccggc 60
 gactctgccg agcgtcagat ttacggcgat ccccatTTtg aacaaaaccg cacaaaagct 120
 gtgaaaatgt tggagcagcg cggttatcag gtttacgatg tcgatgccga cgaccattgg 180
 ggtaagcctg tgctggaagt ggaagcctat aaagacggcc gcgaatacga catcgtgttg 240
 tcttaccocg acctgaaaat catcaaagag cagctcgatc gctga 285

<210> 2750
 <211> 94
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2750
 Met Lys Lys Leu Leu Leu Ala Ala Val Val Ser Leu Ser Ala Ala Ala
 1 5 10 15
 Ala Phe Ala Gly Asp Ser Ala Glu Arg Gln Ile Tyr Gly Asp Pro His
 20 25 30
 Phe Glu Gln Asn Arg Thr Lys Ala Val Lys Met Leu Glu Gln Arg Gly
 35 40 45
 Tyr Gln Val Tyr Asp Val Asp Ala Asp Asp His Trp Gly Lys Pro Val
 50 55 60
 Leu Glu Val Glu Ala Tyr Lys Asp Gly Arg Glu Tyr Asp Ile Val Leu
 65 70 75 80
 Ser Tyr Pro Asp Leu Lys Ile Ile Lys Glu Gln Leu Asp Arg
 85 90

<210> 2751
 <211> 285
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2751
 atgaaaaaac tggtattggt cgccgttggt tccttgagtg ccgcaaccgc atttgccggc 60
 gactctgccg agcgtcagat ttacggcgat ccctatTTtg aacaaaaccg cacaaaagcc 120
 gtgaaaatgt tggaacagcg cggttatcag gttcacgatg tcgatgccga cgaccattgg 180
 ggcaaacctg ttttggaagt ggaagcctat aaagacggcc gcgaatacga cattgtgttg 240

tcttaccgccg acctgaaaat catcaaagag cagctcgatc gctga

285

<210> 2752

<211> 94

<212> PRT

<213> *Neisseria meningitidis*

<400> 2752

Met Lys Lys Leu Leu Leu Val Ala Val Val Ser Leu Ser Ala Ala Thr
1 5 10 15

Ala Phe Ala Gly Asp Ser Ala Glu Arg Gln Ile Tyr Gly Asp Pro Tyr
20 25 30

Phe Glu Gln Asn Arg Thr Lys Ala Val Lys Met Leu Glu Gln Arg Gly
35 40 45

Tyr Gln Val His Asp Val Asp Ala Asp Asp His Trp Gly Lys Pro Val
50 55 60

Leu Glu Val Glu Ala Tyr Lys Asp Gly Arg Glu Tyr Asp Ile Val Leu
65 70 75 80

Ser Tyr Pro Asp Leu Lys Ile Ile Lys Glu Gln Leu Asp Arg
85 90

<210> 2753

<211> 495

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 2753

atgaaaaaga acatattgga attttgggtc ggactgttcg tcttgatcgg cgcggcggcg 60
gttgcccttc tcgctttccg cgtggcgggc ggcgcgcggt tcggcggttc ggacaaaact 120
tacgcggttt atgccgattt cggcgacatc ggcggtttga aggtcaatgc ccccgtaaaa 180
tccgcaggcg tattggtcgg gcgcgtcggc gctatcgggc ttgacccgaa atcctatcag 240
gcgaggggtgc gccttgattt ggacggcaag tatcagttca gcagtgcagt ttccgcgcaa 300
atcctgactt cgggactttt gggcgaacag tacatcgggc tgcagcaggg cggcgatacg 360
gaaaaccttg ctgccggcga caccatctcc gtaaccagtt ctgcaatggt tctggaaaac 420
ctgatcggta aattcatgac cagcttcgcc gagaaaaacg ctgagggcgg caatgcggaa 480
aaagccgcag aataa 495

<210> 2754

<211> 164

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 2754

Met Lys Lys Asn Ile Leu Glu Phe Trp Val Gly Leu Phe Val Leu Ile
1 5 10 15

Gly Ala Ala Ala Val Ala Phe Leu Ala Phe Arg Val Ala Gly Gly Ala
20 25 30

Ala Phe Gly Gly Ser Asp Lys Thr Tyr Ala Val Tyr Ala Asp Phe Gly
35 40 45

Asp Ile Gly Gly Leu Lys Val Asn Ala Pro Val Lys Ser Ala Gly Val
50 55 60

Leu Val Gly Arg Val Gly Ala Ile Gly Leu Asp Pro Lys Ser Tyr Gln
65 70 75 80

Ala Arg Val Arg Leu Asp Leu Asp Gly Lys Tyr Gln Phe Ser Ser Asp
85 90 95

Val Ser Ala Gln Ile Leu Thr Ser Gly Leu Leu Gly Glu Gln Tyr Ile
100 105 110

Gly Leu Gln Gln Gly Gly Asp Thr Glu Asn Leu Ala Ala Gly Asp Thr
115 120 125

Ile Ser Val Thr Ser Ser Ala Met Val Leu Glu Asn Leu Ile Gly Lys
130 135 140

Phe Met Thr Ser Phe Ala Glu Lys Asn Ala Glu Gly Gly Asn Ala Glu
145 150 155 160

Lys Ala Ala Glu

<210> 2755
<211> 495
<212> DNA
<213> Neisseria meningitidis

<400> 2755
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gttgcccttc tcgctttccg cgtggccggc ggtgcggcgt tcggcggttc ggacaaaact 120
tacgcogttt atgccgattt cggcgacatc ggcggtttga aggtcaatgc ccccgtaaaa 180
tccgcaggcg tattggtcgg gcgcgtcggc gctatcggac ttgaccgaa atcctatcag 240
gcgaggggtgc gcctcgattt ggacggcaag tatcagttca gcagcgacgt ttccgcgcaa 300
atcctgactt cgggactttt gggcgagcag tacatcgggc tgcagcagg cggcgacacg 360
gaaaaccttg ctgccggcga caccatctcc gtaaccagtt ctgcaatggt tctggaaaac 420
cttatcggca aattcatgac gagttttgcc gagaaaaatg ccgacggcgg caatgcggaa 480
aaagccgccg aataa 495

<210> 2756
<211> 164
<212> PRT
<213> Neisseria meningitidis

<400> 2756
Met Lys Lys Asn Ile Leu Glu Phe Trp Val Gly Leu Phe Val Leu Ile
1 5 10 15

Gly Ala Ala Ala Val Ala Phe Leu Ala Phe Arg Val Ala Gly Gly Ala
20 25 30

Ala Phe Gly Gly Ser Asp Lys Thr Tyr Ala Val Tyr Ala Asp Phe Gly
35 40 45

Asp Ile Gly Gly Leu Lys Val Asn Ala Pro Val Lys Ser Ala Gly Val
50 55 60

Leu Val Gly Arg Val Gly Ala Ile Gly Leu Asp Pro Lys Ser Tyr Gln
65 70 75 80

Ala Arg Val Arg Leu Asp Leu Asp Gly Lys Tyr Gln Phe Ser Ser Asp
85 90 95

Val Ser Ala Gln Ile Leu Thr Ser Gly Leu Leu Gly Glu Gln Tyr Ile
100 105 110

Gly Leu Gln Gln Gly Gly Asp Thr Glu Asn Leu Ala Ala Gly Asp Thr
115 120 125

Ile Ser Val Thr Ser Ser Ala Met Val Leu Glu Asn Leu Ile Gly Lys
130 135 140

Phe Met Thr Ser Phe Ala Glu Lys Asn Ala Asp Gly Gly Asn Ala Glu
145 150 155 160

Lys Ala Ala Glu

<210> 2757
<211> 495
<212> DNA
<213> *Neisseria meningitidis*

<400> 2757
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gttgccctttc tcgctttccg cgtggccggc ggtgcggcgt tcggcgggtc ggacaaaact 120
tacgccgttt atgccgattt cggcgacatc ggcggtttga aggtcaatgc ccccgtaaaa 180
tcgcgaggcg tattggtcgg gcgcgtcggc gctatcggac ttgacccgaa atcctatcag 240
gcgagggtgc gcctcgattt ggacggcaag tatcagttca gcagcgacgt ttccgcgcaa 300
atcctgactt cgggactttt gggcgagcag tacatcgggc tgcagcaggg cggcgacacg 360
gaaaaccttg ctgccggcga caccatctcc gtaaccagtt ctgcaatggt tctggaaaac 420
cttatcggca aattcatgac gagttttgcc gagaaaaatg ccgacggcgg caatgcggaa 480
aaagccgccg aataa 495

<210> 2758
<211> 164
<212> PRT
<213> *Neisseria meningitidis*

<400> 2758
Met Lys Lys Asn Ile Leu Glu Phe Trp Val Gly Leu Phe Val Leu Ile
1 5 10 15

Gly Ala Ala Ala Val Ala Phe Leu Ala Phe Arg Val Ala Gly Gly Ala
20 25 30

Ala Phe Gly Gly Ser Asp Lys Thr Tyr Ala Val Tyr Ala Asp Phe Gly
 35 40 45

Asp Ile Gly Gly Leu Lys Val Asn Ala Pro Val Lys Ser Ala Gly Val
 50 55 60

Leu Val Gly Arg Val Gly Ala Ile Gly Leu Asp Pro Lys Ser Tyr Gln
 65 70 75 80

Ala Arg Val Arg Leu Asp Leu Asp Gly Lys Tyr Gln Phe Ser Ser Asp
 85 90 95

Val Ser Ala Gln Ile Leu Thr Ser Gly Leu Leu Gly Glu Gln Tyr Ile
 100 105 110

Gly Leu Gln Gln Gly Gly Asp Thr Glu Asn Leu Ala Ala Gly Asp Thr
 115 120 125

Ile Ser Val Thr Ser Ser Ala Met Val Leu Glu Asn Leu Ile Gly Lys
 130 135 140

Phe Met Thr Ser Phe Ala Glu Lys Asn Ala Asp Gly Gly Asn Ala Glu
 145 150 155 160

Lys Ala Ala Glu

<210> 2759

<211> 591

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2759

gtgaaaaaat cctccttcat cagcgcattg ggcacggtg ttttgagcat cggcatggca 60
 tttgcctccc cggccgacgc agtgggacaa atccgcaaaa acgccacaca ggttttgacc 120
 atcctcaaaa gcggcgacgc ggcttctgca cgcccaaaag ccgaagccta tgcggttccc 180
 tatttcgatt tccaacgtat gaccgcattg gcggtcggca acccttggcg taccgcgtcc 240
 gacgcgcaaa aacaagcgtt ggccaaagaa tttcaaaccg tgctgatccg cacctattcc 300
 ggacacgatgc tgaaattcaa aaacgcgacc gtcaacgtca aagacaatcc catcgtcaat 360
 aagggcggca aggaaatcgt cgtccgtgcc gaagtcggca tccccgggca gaagcccgtc 420
 aatatggact ttaccaccta ccaaagcggc ggcaaatacc gtacctacaa cgtcgccatc 480
 gaaggcacga gcctggttac cgtgtaccgc aaccaattcg gcgaaatcat caaagccaaa 540
 ggcacgcacg ggctgattgc cgagttgaaa gccaaaaacg gcggcaaata a 591

<210> 2760

<211> 196

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2760

Val Lys Lys Ser Ser Phe Ile Ser Ala Leu Gly Ile Gly Ile Leu Ser
 1 5 10 15

Ile Gly Met Ala Phe Ala Ser Pro Ala Asp Ala Val Gly Gln Ile Arg

20	25	30
Gln Asn Ala Thr Gln Val Leu Thr Ile Leu Lys Ser Gly Asp Ala Ala		
35	40	45
Ser Ala Arg Pro Lys Ala Glu Ala Tyr Ala Val Pro Tyr Phe Asp Phe		
50	55	60
Gln Arg Met Thr Ala Leu Ala Val Gly Asn Pro Trp Arg Thr Ala Ser		
65	70	75
80		
Asp Ala Gln Lys Gln Ala Leu Ala Lys Glu Phe Gln Thr Leu Leu Ile		
85	90	95
Arg Thr Tyr Ser Gly Thr Met Leu Lys Phe Lys Asn Ala Thr Val Asn		
100	105	110
Val Lys Asp Asn Pro Ile Val Asn Lys Gly Gly Lys Glu Ile Val Val		
115	120	125
Arg Ala Glu Val Gly Ile Pro Gly Gln Lys Pro Val Asn Met Asp Phe		
130	135	140
Thr Thr Tyr Gln Ser Gly Gly Lys Tyr Arg Thr Tyr Asn Val Ala Ile		
145	150	155
160		
Glu Gly Thr Ser Leu Val Thr Val Tyr Arg Asn Gln Phe Gly Glu Ile		
165	170	175
Ile Lys Ala Lys Gly Ile Asp Gly Leu Ile Ala Glu Leu Lys Ala Lys		
180	185	190
Asn Gly Gly Lys		
195		

<210> 2761

<211> 591

<212> DNA

<213> Neisseria meningitidis

<400> 2761

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atgaaaaaat cctccctcat cagcgcattg ggcacgcgta ttttgagcat cggcatggca 60
tttgccgccc ctgccgacgc ggtaagccaa atccgtcaaa acgccactca agtattgagc 120
atcttaaaaa acggcgatgc caacaccgct cgccaaaaag ccgaagccta tgcgattccc 180
tatttcgatt tccaacgtat gaccgcattg gcgctcggca acccttggcg caccgcgtcc 240
gacgcgcaaa aacaagcggt ggccaaagaa tttcaaacc tgctgatccg cacctattcc 300
ggcacgatgc tgaaattaaa aaacgccaac gtcaacgtca aagacaatcc catcgtcaat 360
aaaggcggca aagaaatcat cgtccgcgcc gaagtcggcg taccgggca aaaaccgctc 420
aacatggact tcaccaccta ccaaagcggc ggtaaatacc gtacctaaa cgtcgccatc 480
gaaggcgcga gcctggttac cgtgtaccgc aaccaattcg gcgaaattat caaagcgaaa 540
ggcgtggacg gactgattgc cgagttgaaa gccaaaaacg gcggcaaata a 591

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<210> 2762

<211> 196

<212> PRT

<213> Neisseria meningitidis

<400> 2762

Met Lys Lys Ser Ser Leu Ile Ser Ala Leu Gly Ile Gly Ile Leu Ser
1 5 10 15
Ile Gly Met Ala Phe Ala Ala Pro Ala Asp Ala Val Ser Gln Ile Arg
20 25 30
Gln Asn Ala Thr Gln Val Leu Ser Ile Leu Lys Asn Gly Asp Ala Asn
35 40 45
Thr Ala Arg Gln Lys Ala Glu Ala Tyr Ala Ile Pro Tyr Phe Asp Phe
50 55 60
Gln Arg Met Thr Ala Leu Ala Val Gly Asn Pro Trp Arg Thr Ala Ser
65 70 75 80
Asp Ala Gln Lys Gln Ala Leu Ala Lys Glu Phe Gln Thr Leu Leu Ile
85 90 95
Arg Thr Tyr Ser Gly Thr Met Leu Lys Leu Lys Asn Ala Asn Val Asn
100 105 110
Val Lys Asp Asn Pro Ile Val Asn Lys Gly Gly Lys Glu Ile Ile Val
115 120 125
Arg Ala Glu Val Gly Val Pro Gly Gln Lys Pro Val Asn Met Asp Phe
130 135 140
Thr Thr Tyr Gln Ser Gly Gly Lys Tyr Arg Thr Tyr Asn Val Ala Ile
145 150 155 160
Glu Gly Ala Ser Leu Val Thr Val Tyr Arg Asn Gln Phe Gly Glu Ile
165 170 175
Ile Lys Ala Lys Gly Val Asp Gly Leu Ile Ala Glu Leu Lys Ala Lys
180 185 190
Asn Gly Gly Lys
195

<210> 2763

<211> 591

<212> DNA

<213> Neisseria meningitidis

<400> 2763

atgaaaaaat cctccttcac cagcgcattg ggcacgcgta ttttgagcat cggcatggca 60
tttgccgccc ctgccgagcg ggtaaaccac atccgtcaaa acgccactca agtattgagc 120
atcttaaaaa gcggtgatgc caacaccgcc cgccaaaaag ccgaagccta tgcgattccc 180
tatittcgatt tccaacgtat gaccgcattg gcggtcggca acccttggcg caccgcgtcc 240
gacgcgcaaa aacaagcggt ggccaaagaa tttcaaacc tgctgatccg cacctattcc 300
ggcacgatgc tgaaattaaa aaacgccaac gtcaacgtca aagacaatcc catcgtcaat 360
aaaggcggca aagaaatcat cgtccgcgcc gaagtcggcg taccggggca aaaaccgctc 420
aacatggact tcaccaccta ccaaagcggc ggtaaatacc gtacctacaa cgtcgccatc 480

gaaggcgcga gcctgggttac cgtgtaccgc aaccaattcg gcgaaattat caaagcgaaa 540
 ggcgtggacg gactgattgc cgagttgaag gctaaaaacg gcagcaagta a 591

<210> 2764

<211> 196

<212> PRT

<213> *Neisseria meningitidis*

<400> 2764

Met Lys Lys Ser Ser Phe Ile Ser Ala Leu Gly Ile Gly Ile Leu Ser
 1 5 10 15

Ile Gly Met Ala Phe Ala Ala Pro Ala Asp Ala Val Asn Gln Ile Arg
 20 25 30

Gln Asn Ala Thr Gln Val Leu Ser Ile Leu Lys Ser Gly Asp Ala Asn
 35 40 45

Thr Ala Arg Gln Lys Ala Glu Ala Tyr Ala Ile Pro Tyr Phe Asp Phe
 50 55 60

Gln Arg Met Thr Ala Leu Ala Val Gly Asn Pro Trp Arg Thr Ala Ser
 65 70 75 80

Asp Ala Gln Lys Gln Ala Leu Ala Lys Glu Phe Gln Thr Leu Leu Ile
 85 90 95

Arg Thr Tyr Ser Gly Thr Met Leu Lys Leu Lys Asn Ala Asn Val Asn
 100 105 110

Val Lys Asp Asn Pro Ile Val Asn Lys Gly Gly Lys Glu Ile Ile Val
 115 120 125

Arg Ala Glu Val Gly Val Pro Gly Gln Lys Pro Val Asn Met Asp Phe
 130 135 140

Thr Thr Tyr Gln Ser Gly Gly Lys Tyr Arg Thr Tyr Asn Val Ala Ile
 145 150 155 160

Glu Gly Ala Ser Leu Val Thr Val Tyr Arg Asn Gln Phe Gly Glu Ile
 165 170 175

Ile Lys Ala Lys Gly Val Asp Gly Leu Ile Ala Glu Leu Lys Ala Lys
 180 185 190

Asn Gly Ser Lys
 195

<210> 2765

<211> 834

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 2765

```

atgaaaaaaaa cgcctacgc cactctcctg ctgatcggtt tcgttccgc cctgcattt 60
gcagaaaccc gccccgccga ccttatgaa ggctacaacc gcgccgtttc caaattcaac 120
gaccaagccg accgtacat ttctgcccct gccgcgcgcg gctaccgcaa agttacgccg 180
aaaccgctcc gcgcggcgt gtccaatttt ttaacaacc tgcgcgacgt ggtagctttc 240
ggcagcaata tcttgcggtt ggacatcaaa cgcgcaagcg aagacctcgt ccgcgtcggc 300
atcaatacca ccttcggttt gggcgggctc attgatattg ccggcgcggg cggcgttccc 360
gacaataaaa acactttggg cgacacgttt gcctcgtggg gctggaaaaa cagcaattat 420
ttcgtgttgc cgtcttagg cccgtccacc gtccgcgacg cgtcggcac gggcattacc 480
tctgtttatc cgccaagaa tatcgttttc catacccttg ccggacgctg gggcacgact 540
gccgctgccg ccgtcagtac gcgcgaagcg ctctcgtatt tgaccgacag tctggacgaa 600
gccgccatcg acaatacag ctacacgcgc gacctctata tgaaagtccg cgcacggcag 660
accggtgcaa cacctgccga aggtacggaa gataacatcg acatcgacat cgacgaattg 720
gtcgaaagtg ccgaaaccgg cgcggcagag cccgccgttc acgaagattc cgtatccgaa 780
acacaggcag aagcagcagg ggaagccgaa acgcaacctg gaacacaacc ctaa 834

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<210> 2766

<211> 277

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2766

```

Met Lys Lys Thr Ala Tyr Ala Ile Leu Leu Leu Ile Gly Phe Ala Ser
  1                      5                      10                      15

```

```

Ala Pro Ala Phe Ala Glu Thr Arg Pro Ala Asp Pro Tyr Glu Gly Tyr
      20                      25                      30

```

```

Asn Arg Ala Val Ser Lys Phe Asn Asp Gln Ala Asp Arg Tyr Ile Phe
      35                      40                      45

```

```

Ala Pro Ala Ala Arg Gly Tyr Arg Lys Val Thr Pro Lys Pro Val Arg
      50                      55                      60

```

```

Ala Gly Val Ser Asn Phe Phe Asn Asn Leu Arg Asp Val Val Ser Phe
      65                      70                      75                      80

```

```

Gly Ser Asn Ile Leu Arg Leu Asp Ile Lys Arg Ala Ser Glu Asp Leu
      85                      90                      95

```

```

Val Arg Val Gly Ile Asn Thr Thr Phe Gly Leu Gly Gly Leu Ile Asp
      100                      105                      110

```

```

Ile Ala Gly Ala Gly Gly Val Pro Asp Asn Lys Asn Thr Leu Gly Asp
      115                      120                      125

```

```

Thr Phe Ala Ser Trp Gly Trp Lys Asn Ser Asn Tyr Phe Val Leu Pro
      130                      135                      140

```

```

Val Leu Gly Pro Ser Thr Val Arg Asp Ala Leu Gly Thr Gly Ile Thr
      145                      150                      155                      160

```

```

Ser Val Tyr Pro Pro Lys Asn Ile Val Phe His Thr Pro Ala Gly Arg
      165                      170                      175

```

```

Trp Gly Thr Thr Ala Ala Ala Ala Val Ser Thr Arg Glu Gly Leu Leu
      180                      185                      190

```

Asp Leu Thr Asp Ser Leu Asp Glu Ala Ala Ile Asp Lys Tyr Ser Tyr
195 200 205

Thr Arg Asp Leu Tyr Met Lys Val Arg Ala Arg Gln Thr Gly Ala Thr
210 215 220

Pro Ala Glu Gly Thr Glu Asp Asn Ile Asp Ile Asp Ile Asp Glu Leu
225 230 235 240

Val Glu Ser Ala Glu Thr Gly Ala Ala Glu Pro Ala Val His Glu Asp
245 250 255

Ser Val Ser Glu Thr Gln Ala Glu Ala Ala Gly Glu Ala Glu Thr Gln
260 265 270

Pro Gly Thr Gln Pro
275

<210> 2767

<211> 828

<212> DNA

<213> Neisseria meningitidis

<400> 2767

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atgaaaaaaaa cgcctatgc cttcctcctg ctgatcgggg tgccttcgc cctgcattt 60
gccgaaaccc gcccgccga cccttatgaa ggctacaacc gcgccgtttt caaattcaac 120
gaccaagccg accgtacat ttctgcccc gccgcgcgcg gctaccgcaa agttgcgcgc 180
aaaccgcgtc gcgcgcgcgt gtccaatttt tttaacaacc tgtgcgacgt ggtcagcttc 240
ggcagcaata tcttgcgctt ggacatcaaa cgcgcaagcg aagacctgtt ccgcgtcggc 300
atcaacacca ctttcggttt gggcgggcctt atcgacatcg ccggcgcggg cggcattccc 360
gacaataaaa acaccttggg cgacacgttt gcctcggtgg gatggaaaaa cagcaattat 420
ttcgtgttgc cgtcttagg gccgtccacc gtccgcgacg cgctcggcac gggattacc 480
tcggtttatt cgcccaagaa tatcgtcttc cgacccctg tcggacgctg gggcacgact 540
gccgtatccg ccgtcagtac gcgcgaaggc ctgctcgatt tgaccgacag tctggacgaa 600
gccgccatcg acaaatacag ctacacgcgc gacctctata tgaaagtccg tgcgcggcag 660
accggtgcaa cacctgccga aggtacggaa gataacatcg acatcgacga attggtcgaa 720
agtgccgaaa ccggcgcggc ggaaactgcc gttcaagaag attccgtatc cgaaacacag 780
gcagaagcag caggggaagc cgaaacgcaa cctggaacac aaccttaa 828
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<210> 2768

<211> 275

<212> PRT

<213> Neisseria meningitidis

<400> 2768

Met Lys Lys Thr Ala Tyr Ala Phe Leu Leu Ile Gly Phe Ala Ser
1 5 10 15

Ala Pro Ala Phe Ala Glu Thr Arg Pro Ala Asp Pro Tyr Glu Gly Tyr
20 25 30

Asn Arg Ala Val Phe Lys Phe Asn Asp Gln Ala Asp Arg Tyr Ile Phe
35 40 45

Ala Pro Ala Ala Arg Gly Tyr Arg Lys Val Ala Pro Lys Pro Val Arg
50 55 60

Ala Gly Val Ser Asn Phe Phe Asn Asn Leu Cys Asp Val Val Ser Phe
65 70 75 80

Gly Ser Asn Ile Leu Arg Leu Asp Ile Lys Arg Ala Ser Glu Asp Leu
85 90 95

Val Arg Val Gly Ile Asn Thr Thr Phe Gly Leu Gly Gly Leu Ile Asp
100 105 110

Ile Ala Gly Ala Gly Gly Ile Pro Asp Asn Lys Asn Thr Leu Gly Asp
115 120 125

Thr Phe Ala Ser Trp Gly Trp Lys Asn Ser Asn Tyr Phe Val Leu Pro
130 135 140

Val Leu Gly Pro Ser Thr Val Arg Asp Ala Leu Gly Thr Gly Ile Thr
145 150 155 160

Ser Val Tyr Ser Pro Lys Asn Ile Val Phe Arg Thr Pro Val Gly Arg
165 170 175

Trp Gly Thr Thr Ala Val Ser Ala Val Ser Thr Arg Glu Gly Leu Leu
180 185 190

Asp Leu Thr Asp Ser Leu Asp Glu Ala Ala Ile Asp Lys Tyr Ser Tyr
195 200 205

Thr Arg Asp Leu Tyr Met Lys Val Arg Ala Arg Gln Thr Gly Ala Thr
210 215 220

Pro Ala Glu Gly Thr Glu Asp Asn Ile Asp Ile Asp Glu Leu Val Glu
225 230 235 240

Ser Ala Glu Thr Gly Ala Ala Glu Thr Ala Val Gln Glu Asp Ser Val
245 250 255

Ser Glu Thr Gln Ala Glu Ala Ala Gly Glu Ala Glu Thr Gln Pro Gly
260 265 270

Thr Gln Pro
275

<210> 2769
<211> 840
<212> DNA
<213> Neisseria meningitidis

<400> 2769
atgaaaaaaa cgcctatgc ctctctctg ctgatcgggt tcgcttccgc ccctgcattt 60
gcgaaaccc gcccgccga cccttatgaa ggctacaacc gcgccgtttt caaattcaac 120
gaccaagccg accgtacat ttctgcccc ggcgcgcgcg gctaccgcaa agttgcgccg 180
aaaccgcgcc gcgccgcgt gtccaatttt tttacaacc tgtgcgacgt ggtcagcttc 240

ggcagcaata tcttgcgctt agacatcaaa cgcgcaagcg aagaccttgt ccgcgtcggg 300
 atcaacacca ctttcggttt gggcggggctt atcgacatcg ccggcgcggg cggcattccc 360
 gacaataaaa acaccttggg cgacacgttt gcttcgtggg gatggaaaaa cagcaattat 420
 ttcgtgttgc ccgtcttagg gccgtccacc gtccgcgacg cgctcggcac gggattacc 480
 tccgtttatt cgcccaagaa tatcgtcttc cgcacccctg tcggacgctg gggcacgact 540
 gccgtatccg ccgtcagtac gcgcgaaggc ctgctcgatt tgaccgacag tctggacgaa 600
 gccgccatcg acaaatacag ctacacgcgc gacctctata tgaaagtccg tgcgcggcag 660
 accggtgcaa cacctgccga aggtacggaa gataacatcg acatcgacga attggtcgaa 720
 agtgccgaaa ccggcgcggc ggaaactgcc gttcaagaag attccgtatc cgaaacacag 780
 gcagaagcag caggggaagc cgaaacgcaa cctggaacac aacctggaac acaaccttaa 840

<210> 2770

<211> 279

<212> PRT

<213> *Neisseria meningitidis*

<400> 2770

Met Lys Lys Thr Ala Tyr Ala Phe Leu Leu Leu Ile Gly Phe Ala Ser
 1 5 10 15

Ala Pro Ala Phe Ala Glu Thr Arg Pro Ala Asp Pro Tyr Glu Gly Tyr
 20 25 30

Asn Arg Ala Val Phe Lys Phe Asn Asp Gln Ala Asp Arg Tyr Ile Phe
 35 40 45

Ala Pro Ala Ala Arg Gly Tyr Arg Lys Val Ala Pro Lys Pro Val Arg
 50 55 60

Ala Gly Val Ser Asn Phe Phe Asn Asn Leu Cys Asp Val Val Ser Phe
 65 70 75 80

Gly Ser Asn Ile Leu Arg Leu Asp Ile Lys Arg Ala Ser Glu Asp Leu
 85 90 95

Val Arg Val Gly Ile Asn Thr Thr Phe Gly Leu Gly Gly Leu Ile Asp
 100 105 110

Ile Ala Gly Ala Gly Gly Ile Pro Asp Asn Lys Asn Thr Leu Gly Asp
 115 120 125

Thr Phe Ala Ser Trp Gly Trp Lys Asn Ser Asn Tyr Phe Val Leu Pro
 130 135 140

Val Leu Gly Pro Ser Thr Val Arg Asp Ala Leu Gly Thr Gly Ile Thr
 145 150 155 160

Ser Val Tyr Ser Pro Lys Asn Ile Val Phe Arg Thr Pro Val Gly Arg
 165 170 175

Trp Gly Thr Thr Ala Val Ser Ala Val Ser Thr Arg Glu Gly Leu Leu
 180 185 190

Asp Leu Thr Asp Ser Leu Asp Glu Ala Ala Ile Asp Lys Tyr Ser Tyr
 195 200 205

Thr Arg Asp Leu Tyr Met Lys Val Arg Ala Arg Gln Thr Gly Ala Thr
210 215 220

Pro Ala Glu Gly Thr Glu Asp Asn Ile Asp Ile Asp Glu Leu Val Glu
225 230 235 240

Ser Ala Glu Thr Gly Ala Ala Glu Thr Ala Val Gln Glu Asp Ser Val
245 250 255

Ser Glu Thr Gln Ala Glu Ala Ala Gly Glu Ala Glu Thr Gln Pro Gly
260 265 270

Thr Gln Pro Gly Thr Gln Pro
275

<210> 2771

<211> 729

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2771

atgaaaaaat gtattttggg cattttgacc gcgtgtgccg ccatgcctgc atttgccgac 60
agaatcagcg atttgaagc acgtctggcg cagtgggaac accgtgtcgc cgtattggaa 120
agcggcggca ataccgtcaa aatcgacctt ttcggttcaa attccaccat gtatgtatgc 180
agcgttacgc cttttcagaa gacgtttgag gcaagcgatc ggaatgaagg cgtggcgcgg 240
cagaaagtgc gtcaggcgtg caaccgcgaa acttcggcaa tgttttgcgg agatgaggca 300
atccgatgca gaaaattcga ttgatgtatc ggttggacgg ataaagaaac ggatacggag 360
cttggcttcc gtctctgttt ttctctgccc gattttccat gcctcgggtt tcagacggca 420
ttggagtgtc agtcgtgttc tgccgattcg taggcttoga cgattttttg caccagagga 480
tgccggacaa cgtcttcgcc ggtgaaggta tggaaataca gtcctgccac gccgtgcagt 540
ttctcacgtg cgtctttcaa tcccgatttg atgtttttgg gcaggtcgat ttggctgggtg 600
tcgccggtaa tgacggcttt cgcgcgaag ccgatgcggg tcaggaacat tttcatttgt 660
tcgggcgtgg tgttttgcgc ttctctgagg atgatgtatg cgccgttgag cgtcctgccg 720
cgcatatag 729

<210> 2772

<211> 240

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2772

Met Lys Lys Cys Ile Leu Gly Ile Leu Thr Ala Cys Ala Ala Met Pro
1 5 10 15

Ala Phe Ala Asp Arg Ile Ser Asp Leu Glu Ala Arg Leu Ala Gln Leu
20 25 30

Glu His Arg Val Ala Val Leu Glu Ser Gly Gly Asn Thr Val Lys Ile
35 40 45

Asp Leu Phe Gly Ser Asn Ser Thr Met Tyr Val Cys Ser Val Thr Pro
50 55 60

Phe Gln Lys Thr Phe Glu Ala Ser Asp Arg Asn Glu Gly Val Ala Arg

65 70 75 80
 Gln Lys Val Arg Gln Ala Cys Asn Arg Glu Thr Ser Ala Met Phe Cys
 85 90 95
 Gly Asp Glu Ala Ile Arg Cys Arg Lys Phe Asp Cys Ile Gly Trp Thr
 100 105 110
 Asp Lys Glu Thr Asp Thr Glu Leu Gly Phe Arg Leu Cys Phe Ser Leu
 115 120 125
 Pro Asp Phe Pro Cys Ile Gly Phe Gln Thr Ala Leu Glu Cys Gln Ser
 130 135 140
 Cys Ser Ala Asp Ser Ala Ser Thr Ile Phe Cys Thr Arg Gly Cys Arg
 145 150 155 160
 Thr Thr Ser Ser Pro Val Lys Val Trp Lys Tyr Ser Pro Ala Thr Pro
 165 170 175
 Cys Ser Phe Ser Arg Ala Ser Phe Asn Pro Asp Leu Met Phe Leu Gly
 180 185 190
 Arg Ser Ile Trp Leu Val Ser Pro Val Met Thr Ala Phe Ala Pro Lys
 195 200 205
 Pro Met Arg Val Arg Asn Ile Phe Ile Cys Ser Gly Val Val Phe Cys
 210 215 220
 Ala Ser Ser Arg Met Met Tyr Ala Pro Leu Ser Val Leu Pro Arg Ile
 225 230 235 240

<210> 2773

<211> 735

<212> DNA

<213> Neisseria meningitidis

<400> 2773

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 agcggcggca ataccgtcaa aatcgacctt ttcggttcaa attccaccat gtatgtatgc 180
 agcgttacgc cttttcagaa gacgtttgag gcaagcgatc ggaatgaagg cgtggcgcgg 240
 cagaaagtgc gtcaggcgtg caaccgcgaa acttcggcaa tgttttgca agatgaggca 300
 atccgatgca gaaaattcga ttgatgtatc ggttggacgg ataaagaaac ggatacggat 360
 acggagcttg gcttcctgat ctgtttttct ctgcctgatt ttccatgcat cgggtttcag 420
 acggcatttg aatgtcagtc gtgtttctgcc gattcgtagg cttcgacgat tttttgcacc 480
 aaaggatgcc ggacaacgtc ttcgcgggta aaggtgtgga aatacagccc ttccacgttg 540
 tgcagtttct cacgcgcata ttttaatccc gatttgatgt ttttgggcag gtcgatttgg 600
 ctgggtgtcgc cggtaatgac ggctttcgcg ccgaagccga tgcgggtcag gaacattttc 660
 atttgttcgg gcgtggtgtt ttgcgcttcg tcgaggatga tgtatgcgcc gttgagcgtc 720
 ctgccgcgca tatag 735

<210> 2774
<211> 244
<212> PRT
<213> Neisseria meningitidis

<400> 2774
Met Lys Lys Cys Ile Leu Gly Ile Leu Thr Ala Cys Ala Ala Met Pro
1 5 10 15
Ala Phe Ala Asp Arg Ile Gly Asp Leu Glu Ala Arg Leu Ala Gln Leu
20 25 30
Glu His Arg Val Ala Val Leu Glu Ser Gly Gly Asn Thr Val Lys Ile
35 40 45
Asp Leu Phe Gly Ser Asn Ser Thr Met Tyr Val Cys Ser Val Thr Pro
50 55 60
Phe Gln Lys Thr Phe Glu Ala Ser Asp Arg Asn Glu Gly Val Ala Arg
65 70 75 80
Gln Lys Val Arg Gln Ala Cys Asn Arg Glu Thr Ser Ala Met Phe Cys
85 90 95
Glu Asp Glu Ala Ile Arg Cys Arg Lys Phe Asp Xaa Cys Ile Gly Trp
100 105 110
Thr Asp Lys Glu Thr Asp Thr Asp Thr Glu Leu Gly Phe Arg Ile Cys
115 120 125
Phe Ser Leu Pro Asp Phe Pro Cys Ile Gly Phe Gln Thr Ala Leu Glu
130 135 140
Cys Gln Ser Cys Ser Ala Asp Ser Xaa Ala Ser Thr Ile Phe Cys Thr
145 150 155 160
Lys Gly Cys Arg Thr Thr Ser Ser Pro Val Lys Val Trp Lys Tyr Ser
165 170 175
Pro Ser Thr Leu Cys Ser Phe Ser Arg Ala Ser Phe Asn Pro Asp Leu
180 185 190
Met Phe Leu Gly Arg Ser Ile Trp Leu Val Ser Pro Val Met Thr Ala
195 200 205
Phe Ala Pro Lys Pro Met Arg Val Arg Asn Ile Phe Ile Cys Ser Gly
210 215 220
Val Val Phe Cys Ala Ser Ser Arg Met Met Tyr Ala Pro Leu Ser Val
225 230 235 240
Leu Pro Arg Ile

<210> 2775

<211> 729
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2775
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 agaatcggcg atttggaagc acgtctggcg cagttggaac accgtgtcgc cgtattggaa 120
 agcggcagca ataccgtcaa aatcgacctt ttcggttcaa attccaccat gtatgtatgc 180
 agcgttacgc cttttcagaa gacgtttgag gcaagcgatc ggaatgaagg cgtggcgcgg 240
 cagaaagtgc gtcaggcggtg caaccgcgaa acttcggcaa tgttttgca agatgaggca 300
 atccgatgca gaaaattcga ttgatgtatc ggttggacgg ataaagaaac ggatacggag 360
 cttggcttcc gtatctgttt ttctctgccc gattttccat gcacgagggt tcagacggca 420
 ttggaatgac agtcgtgttc tgccgattcg taggcttcga cgattttttg caccaaagga 480
 tgccggacaa cgtcttcgcc ggtaaagggtg tggaaatata gcccttcac gccgtgcagt 540
 ttctcacgcg catcttttaa tcccgatattg atgtttttgg gcaggtcgat ttggctgggtg 600
 tcgccggtaa tgacggcttt cgcgccgaag ccgatgcggg tcaggaacat tttcatttgt 660
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 cgcataatag 729

<210> 2776
 <211> 240
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2776
 Met Lys Lys Cys Ile Leu Gly Ile Leu Thr Ala Cys Ala Ala Met Pro
 1 5 10 15
 Ala Phe Ala Asp Arg Ile Gly Asp Leu Glu Ala Arg Leu Ala Gln Leu
 20 25 30
 Glu His Arg Val Ala Val Leu Glu Ser Gly Ser Asn Thr Val Lys Ile
 35 40 45
 Asp Leu Phe Gly Ser Asn Ser Thr Met Tyr Val Cys Ser Val Thr Pro
 50 55 60
 Phe Gln Lys Thr Phe Glu Ala Ser Asp Arg Asn Glu Gly Val Ala Arg
 65 70 75 80
 Gln Lys Val Arg Gln Ala Cys Asn Arg Glu Thr Ser Ala Met Phe Cys
 85 90 95
 Glu Asp Glu Ala Ile Arg Cys Arg Lys Phe Asp Cys Ile Gly Trp Thr
 100 105 110
 Asp Lys Glu Thr Asp Thr Glu Leu Gly Phe Arg Ile Cys Phe Ser Leu
 115 120 125
 Pro Asp Phe Pro Cys Ile Gly Phe Gln Thr Ala Leu Glu Cys Gln Ser
 130 135 140
 Cys Ser Ala Asp Ser Ala Ser Thr Ile Phe Cys Thr Lys Gly Cys Arg
 145 150 155 160

Thr Thr Ser Ser Pro Val Lys Val Trp Lys Tyr Ser Pro Ser Thr Pro
165 170 175

Cys Ser Phe Ser Arg Ala Ser Phe Asn Pro Asp Leu Met Phe Leu Gly
180 185 190

Arg Ser Ile Trp Leu Val Ser Pro Val Met Thr Ala Phe Ala Pro Lys
195 200 205

Pro Met Arg Val Arg Asn Ile Phe Ile Cys Ser Gly Val Val Phe Cys
210 215 220

Ala Ser Ser Arg Met Met Tyr Ala Pro Leu Ser Val Leu Pro Arg Ile
225 230 235 240

<210> 2777

<211> 495

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2777

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gaagaggcac cgccgccttt accccggcag attagcgacc gttcggtcgg acactattgc 120
agtatgaacc tgaccgaaca caacggcccc aaagcccaga tttttttgaa cggcaaaccc 180
gatcagcccc tttggttctc caccgtcaag cagatgttcg gctataccaa gctgccccga 240
gagcccaaag gcatccgcgt gatttacgtt accgatattg gcaatgttac cgattggacg 300
aatcctaatt ccgacacgga gtggatagat gcgaaaaaag ccttttacgt catcgacagc 360
ggctttatcg gcggtatggg cgcggaagac gcgctgccgt tcggcaacaa ggagcaggct 420
gaaaaatttg caaaggataa aggcggcaag gtcgtcgggt ttgacgatat gcccgatgct 480
tacattttca agtaa 495

<210> 2778

<211> 164

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2778

Met Lys Lys Thr Leu Leu Ala Ile Val Ala Val Phe Ala Leu Ser Ala
1 5 10 15

Cys Arg Gln Ala Glu Glu Ala Pro Pro Pro Leu Pro Arg Gln Ile Ser
20 25 30

Asp Arg Ser Val Gly His Tyr Cys Ser Met Asn Leu Thr Glu His Asn
35 40 45

Gly Pro Lys Ala Gln Ile Phe Leu Asn Gly Lys Pro Asp Gln Pro Val
50 55 60

Trp Phe Ser Thr Val Lys Gln Met Phe Gly Tyr Thr Lys Leu Pro Glu
65 70 75 80

Glu Pro Lys Gly Ile Arg Val Ile Tyr Val Thr Asp Met Gly Asn Val
 85 90 95
 Thr Asp Trp Thr Asn Pro Asn Ala Asp Thr Glu Trp Ile Asp Ala Lys
 100 105 110
 Lys Ala Phe Tyr Val Ile Asp Ser Gly Phe Ile Gly Gly Met Gly Ala
 115 120 125
 Glu Asp Ala Leu Pro Phe Gly Asn Lys Glu Gln Ala Glu Lys Phe Ala
 130 135 140
 Lys Asp Lys Gly Gly Lys Val Val Gly Phe Asp Asp Met Pro Asp Ala
 145 150 155 160
 Tyr Ile Phe Lys

<210> 2779
 <211> 494
 <212> DNA
 <213> Neisseria meningitidis

<400> 2779
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 aagagggacc gccgccttta ccccggcaga ttagcgaccg ttcggtcggg cactattgca 120
 gtatgaacct gaccgaacac aacggcccca aagcccagat tttcttgaac ggcaaaccgg 180
 atcagcccggt ttggtttctcc accatcaagc agatgttcgg ctataccaag ctgcccgaag 240
 agcctaaagg catccgcgtg atttacgtta ccgatatggg caatgttacc gattggacga 300
 atcccaatgc cgacacggag tggatggatg cgaaaaaagc cttttacgtc atcgacagcg 360
 gctttatcgg cggtatgggt gcggaagacg cgctgccgtt cggcaacaaa gagcaggctg 420
 agaaatttgc aaaggataaa ggcggtaagg ttgtcggttt cgacgatatg cctgatacct 480
 atattttcaa ataa 494

<210> 2780
 <211> 164
 <212> PRT
 <213> Neisseria meningitidis

<400> 2780
 Met Lys Lys Thr Leu Leu Ala Ile Val Ala Val Ser Ala Leu Ser Xaa
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 20 25 30
 Asp Arg Ser Val Gly His Tyr Cys Ser Met Asn Leu Thr Glu His Asn
 35 40 45
 Gly Pro Lys Ala Gln Ile Phe Leu Asn Gly Lys Pro Asp Gln Pro Val
 50 55 60
 Trp Phe Ser Thr Ile Lys Gln Met Phe Gly Tyr Thr Lys Leu Pro Glu
 65 70 75 80

Glu Pro Lys Gly Ile Arg Val Ile Tyr Val Thr Asp Met Gly Asn Val
 85 90 95
 Thr Asp Trp Thr Asn Pro Asn Ala Asp Thr Glu Trp Met Asp Ala Lys
 100 105 110
 Lys Ala Phe Tyr Val Ile Asp Ser Gly Phe Ile Gly Gly Met Gly Ala
 115 120 125
 Glu Asp Ala Leu Pro Phe Gly Asn Lys Glu Gln Ala Glu Lys Phe Ala
 130 135 140
 Lys Asp Lys Gly Gly Lys Val Val Gly Phe Asp Asp Met Pro Asp Thr
 145 150 155 160
 Tyr Ile Phe Lys

<210> 2781
 <211> 495
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2781
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 agtatgaacc tgaccgaaca caacggcccc aaagcccaga ttttcttgaa cggcaaacc 180
 gatcagcccg ttgtgttctc caccatcaag cagatgttcg gctataccaa gctgcccga 240
 gagcctaaag gcatccgcgt gatttacgtt accgatatgg gcaatgttac cgattggacg 300
 aatcccaatg ccgacacgga gtggatggat gcgaaaaaag ccttttacgt catcgacagc 360
 ggctttatcg gcggtatggg tgcggaagac gcgctgccgt tcggcaacaa agagcaggct 420
 gagaaatttg caaaggataa aggcggtaag gttgtcggtt tcgacgatat gcctgatacc 480
 tatattttca aataa 495

<210> 2782
 <211> 164
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2782
 Met Lys Lys Thr Leu Leu Ala Ile Val Ala Val Ser Ala Leu Ser Ala
 1 5 10 15
 Cys Arg Gln Ala Glu Glu Gly Pro Pro Pro Leu Pro Arg Gln Ile Ser
 20 25 30
 Asp Arg Ser Val Gly His Tyr Cys Ser Met Asn Leu Thr Glu His Asn
 35 40 45
 Gly Pro Lys Ala Gln Ile Phe Leu Asn Gly Lys Pro Asp Gln Pro Val
 50 55 60
 Trp Phe Ser Thr Ile Lys Gln Met Phe Gly Tyr Thr Lys Leu Pro Glu
 65 70 75 80

Glu Pro Lys Gly Ile Arg Val Ile Tyr Val Thr Asp Met Gly Asn Val
85 90 95

Thr Asp Trp Thr Asn Pro Asn Ala Asp Thr Glu Trp Met Asp Ala Lys
100 105 110

Lys Ala Phe Tyr Val Ile Asp Ser Gly Phe Ile Gly Gly Met Gly Ala
115 120 125

Glu Asp Ala Leu Pro Phe Gly Asn Lys Glu Gln Ala Glu Lys Phe Ala
130 135 140

Lys Asp Lys Gly Gly Lys Val Val Gly Phe Asp Asp Met Pro Asp Thr
145 150 155 160

Tyr Ile Phe Lys

<210> 2783

<211> 1131

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2783

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tataactggt cggaatacgt cgatccggaa accgttgccg attttgaaaa gaaaaacggc 180
atcaagggtta cttatgatgt gtacgacagt gatgaaacgc tggaaagcaa ggtgctgacc 240
ggaaaatccg gttacgacat tgtcgcgccg tccaatgcgt ttgtgggcag gcagattaag 300
gcagggtgcgt atcagaaaaat cgataagtcg atgattccca attataaaca tctcaaccct 360
gaaatgatga ggctgatgga cggggtcgat cccgaccacg aatacgccgt gccgttttat 420
tgggggacaa ataccttcgc catcaatacc gaacgcgtga aaaaggcttt gggtagcgac 480
aagctgcccg acaaccagtg ggatttggtg ttcaaccccg aatacacgtt caaactcaaa 540
caatgcggca tcagctattt ggacagcgcg gcggaaattt atcccatggt gttgaactat 600
ttgggcaaaa acccgaacag cagcaatacg gaagacatca gggaggcaac cgcctgctc 660
aagaaaaacc gcccaatat caaacgcttt acttcgtccg gctttatcga tgatttggcg 720
cgcggcgata cctgcgtaac aatcggtttc ggcgagatt tgaacatcgc caaacgccgt 780
gccgaagaag cgggcggcaa ggaaaaaatc cgcgtagtga tgccgaaaga ggcgtgggg 840
atttgggtgg attctttcgt gattccgaaa gatgcgaaaa acgtcgccaa cgcgcacaaa 900
tacatcaacg acttcctcga tccggaagtg tcggcgaaaa acggcaattt cgttacctac 960
gcgccttcga gcaagccggc gcgcgatttg atggaggacg aatttaaaaa cgacaatacg 1020
attttccgga gcggggaaga tttgaaaaac agctttatca tggcgcctat ccggccggcg 1080
gcattgaagt ttatgggtgcg ccagtggcag gatgtgaagg cggggaaata a 1131
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<210> 2784

<211> 376

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2784

Met Val Lys His Leu Pro Leu Ala Val Leu Thr Ala Leu Leu Leu Ala
1 5 10 15

Ala Cys Gly Gly Ser Asp Lys Pro Pro Ala Glu Lys Pro Ala Pro Ala

20							25							30						
Glu	Asn	Gln	Asn	Val	Leu	Lys	Ile	Tyr	Asn	Trp	Ser	Glu	Tyr	Val	Asp					
		35					40					45								
Pro	Glu	Thr	Val	Ala	Asp	Phe	Glu	Lys	Lys	Asn	Gly	Ile	Lys	Val	Thr					
	50					55					60									
Tyr	Asp	Val	Tyr	Asp	Ser	Asp	Glu	Thr	Leu	Glu	Ser	Lys	Val	Leu	Thr					
65					70					75					80					
Gly	Lys	Ser	Gly	Tyr	Asp	Ile	Val	Ala	Pro	Ser	Asn	Ala	Phe	Val	Gly					
				85					90					95						
Arg	Gln	Ile	Lys	Ala	Gly	Ala	Tyr	Gln	Lys	Ile	Asp	Lys	Ser	Met	Ile					
			100					105					110							
Pro	Asn	Tyr	Lys	His	Leu	Asn	Pro	Glu	Met	Met	Arg	Leu	Met	Asp	Gly					
		115						120					125							
Val	Asp	Pro	Asp	His	Glu	Tyr	Ala	Val	Pro	Phe	Tyr	Trp	Gly	Thr	Asn					
	130					135					140									
Thr	Phe	Ala	Ile	Asn	Thr	Glu	Arg	Val	Lys	Lys	Ala	Leu	Gly	Thr	Asp					
145					150					155					160					
Lys	Leu	Pro	Asp	Asn	Gln	Trp	Asp	Leu	Val	Phe	Asn	Pro	Glu	Tyr	Thr					
				165				170						175						
Phe	Lys	Leu	Lys	Gln	Cys	Gly	Ile	Ser	Tyr	Leu	Asp	Ser	Ala	Ala	Glu					
		180					185						190							
Ile	Tyr	Pro	Met	Val	Leu	Asn	Tyr	Leu	Gly	Lys	Asn	Pro	Asn	Ser	Ser					
		195					200						205							
Asn	Thr	Glu	Asp	Ile	Arg	Glu	Ala	Thr	Ala	Leu	Leu	Lys	Lys	Asn	Arg					
	210					215					220									
Pro	Asn	Ile	Lys	Arg	Phe	Thr	Ser	Ser	Gly	Phe	Ile	Asp	Asp	Leu	Ala					
225					230					235					240					
Arg	Gly	Asp	Thr	Cys	Val	Thr	Ile	Gly	Phe	Gly	Gly	Asp	Leu	Asn	Ile					
				245				250					255							
Ala	Lys	Arg	Arg	Ala	Glu	Glu	Ala	Gly	Gly	Lys	Glu	Lys	Ile	Arg	Val					
			260					265					270							
Met	Met	Pro	Lys	Glu	Gly	Val	Gly	Ile	Trp	Val	Asp	Ser	Phe	Val	Ile					
		275					280					285								
Pro	Lys	Asp	Ala	Lys	Asn	Val	Ala	Asn	Ala	His	Lys	Tyr	Ile	Asn	Asp					
	290					295					300									
Phe	Leu	Asp	Pro	Glu	Val	Ser	Ala	Lys	Asn	Gly	Asn	Phe	Val	Thr	Tyr					
305					310					315					320					
Ala	Pro	Ser	Ser	Lys	Pro	Ala	Arg	Asp	Leu	Met	Glu	Asp	Glu	Phe	Lys					

325

330

335

Asn Asp Asn Thr Ile Phe Pro Ser Gly Glu Asp Leu Lys Asn Ser Phe
 340 345 350

Ile Met Val Pro Ile Arg Pro Ala Ala Leu Lys Phe Met Val Arg Gln
 355 360 365

Trp Gln Asp Val Lys Ala Gly Lys
 370 375

<210> 2785

<211> 1131

<212> DNA

<213> Neisseria meningitidis

<400> 2785

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 tacaactggt cggaatatgt cgatccggaa accgttgccg attttgaaaa gaaaaacggc 180
 atcaagggtta cttatgatgt gtacgacagc gatgaaacgc tggaaagcaa ggtgctgaca 240
 ggcaagtccg gttacgacat tgtcgcgccg tccaatgcgt ttgtgggcag gcagattaag 300
 gcaggtgcgt atcagaaaat cgataagtcg ctgattccca attataaaca cctcaacccc 360
 gaaatgatga ggctgatgga cggggtcgat ccgggccacg aatacgccgt gccgttttat 420
 tgggggacaa ataccttcgc catcaatacc gaacgcgtga aaaaggcttt gggtacggac 480
 aagctgccgg acaaccagtg ggatttggtg ttcgaccccg aatacacgtc caaactcaag 540
 caatgcggca tcagctatgt ggacagcgcg gcggaaatct atcctatggt gttgaactat 600
 ttgggtaaaa acccgaacag cagcaatacg gaagacatca gggaggcaac cgccctactc 660
 aagaaaaacc gccccaatat caaacgcttt acttcgtccg gctttatcga tgatttggcg 720
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 atttgggtgg attctttcgt gattccgaaa gatgcgaaaa acgtcgccaa cgcgcacaaa 900
 tacatcaacg acttcctcga cccggaagtg tcggcgaaaa acggcaattt cgttacttac 960
 gcgccttcga gcaagcctgc gcgtgagctg atggaagacg aatttaaaaa cgacaatacg 1020
 attttcccaa ccgaggagga tttgaaaaac agctttatca tggcgcctat ccagccggcg 1080
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<210> 2786

<211> 376

<212> PRT

<213> Neisseria meningitidis

<400> 2786

Met Thr Lys His Leu Pro Leu Ala Val Leu Thr Ala Leu Leu Leu Ala
 1 5 10 15

Ala Cys Gly Gly Ser Asp Lys Pro Pro Ala Glu Lys Pro Ala Pro Ala
 20 25 30

Glu Asn Gln Asn Val Leu Lys Ile Tyr Asn Trp Ser Glu Tyr Val Asp
 35 40 45

Pro Glu Thr Val Ala Asp Phe Glu Lys Lys Asn Gly Ile Lys Val Thr
 50 55 60

Tyr Asp Val Tyr Asp Ser Asp Glu Thr Leu Glu Ser Lys Val Leu Thr
 65 70 75 80
 Gly Lys Ser Gly Tyr Asp Ile Val Ala Pro Ser Asn Ala Phe Val Gly
 85 90 95
 Arg Gln Ile Lys Ala Gly Ala Tyr Gln Lys Ile Asp Lys Ser Leu Ile
 100 105 110
 Pro Asn Tyr Lys His Leu Asn Pro Glu Met Met Arg Leu Met Asp Gly
 115 120 125
 Val Asp Pro Gly His Glu Tyr Ala Val Pro Phe Tyr Trp Gly Thr Asn
 130 135 140
 Thr Phe Ala Ile Asn Thr Glu Arg Val Lys Lys Ala Leu Gly Thr Asp
 145 150 155 160
 Lys Leu Pro Asp Asn Gln Trp Asp Leu Val Phe Asp Pro Glu Tyr Thr
 165 170 175
 Ser Lys Leu Lys Gln Cys Gly Ile Ser Tyr Leu Asp Ser Ala Ala Glu
 180 185 190
 Ile Tyr Pro Met Val Leu Asn Tyr Leu Gly Lys Asn Pro Asn Ser Ser
 195 200 205
 Asn Thr Glu Asp Ile Arg Glu Ala Thr Ala Leu Leu Lys Lys Asn Arg
 210 215 220
 Pro Asn Ile Lys Arg Phe Thr Ser Ser Gly Phe Ile Asp Asp Leu Ala
 225 230 235 240
 Arg Gly Asp Thr Cys Val Thr Ile Gly Phe Gly Gly Asp Leu Asn Ile
 245 250 255
 Ala Lys Arg Arg Ala Glu Glu Ala Gly Gly Lys Glu Lys Ile Arg Val
 260 265 270
 Met Met Pro Lys Glu Gly Val Gly Ile Trp Val Asp Ser Phe Val Ile
 275 280 285
 Pro Lys Asp Ala Lys Asn Val Ala Asn Ala His Lys Tyr Ile Asn Asp
 290 295 300
 Phe Leu Asp Pro Glu Val Ser Ala Lys Asn Gly Asn Phe Val Thr Tyr
 305 310 315 320
 Ala Pro Ser Ser Lys Pro Ala Arg Glu Leu Met Glu Asp Glu Phe Lys
 325 330 335
 Asn Asp Asn Thr Ile Phe Pro Thr Glu Glu Asp Leu Lys Asn Ser Phe
 340 345 350
 Ile Met Val Pro Ile Gln Pro Ala Ala Leu Lys Phe Met Val Arg Gln
 355 360 365

Trp Gln Asp Val Lys Ala Gly Lys
370 375

<210> 2787
<211> 1131
<212> DNA
<213> Neisseria meningitidis

<400> 2787
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tacaactggt cggaatacgt cgatccggaa accgttgccg attttgaaaa gaaaaacggc 180
atcaaggtta cttatgatgt gtacgacagc gatgaaacgc tggaaagcaa ggtgctgacc 240
ggaaaatctg gttacgacat tgtcgcgccg tccaatgcgt ttgtgggcag gcagattaag 300
gcagggtgctg atcagaaaaat cgataagtcg ctgattccca attataaaca cctcaacccc 360
gaaatgatga ggctgatgga cggggtcgat ccgggccacg aatacgccgt gccgttttat 420
tgggggacaa atacccttcgc catcaatacc gaacgcgtga aaaaggcttt gggtagcgac 480
aagctgccgg acaaccagtg ggatttggtg ttcgaccccg aatacacgtc caaactcaag 540
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<210> 2788
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<212> PRT
<213> Neisseria meningitidis

<400> 2788
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35 40 45
Pro Glu Thr Val Ala Asp Phe Glu Lys Lys Asn Gly Ile Lys Val Thr
50 55 60
Tyr Asp Val Tyr Asp Ser Asp Glu Thr Leu Glu Ser Lys Val Leu Thr
65 70 75 80
Gly Lys Ser Gly Tyr Asp Ile Val Ala Pro Ser Asn Ala Phe Val Gly
85 90 95
Arg Gln Ile Lys Ala Gly Ala Tyr Gln Lys Ile Asp Lys Ser Leu Ile
100 105 110



Pro Asn Tyr Lys His Leu Asn Pro Glu Met Met Arg Leu Met Asp Gly

115

120

125

Val Asp Pro Gly His Glu Tyr Ala Val Pro Phe Tyr Trp Gly Thr Asn

130

135

140

Thr Phe Ala Ile Asn Thr Glu Arg Val Lys Lys Ala Leu Gly Thr Asp

145

150

155

160

Lys Leu Pro Asp Asn Gln Trp Asp Leu Val Phe Asp Pro Glu Tyr Thr

165

170

175

Ser Lys Leu Lys Gln Cys Gly Ile Ser Tyr Leu Asp Ser Ala Ala Glu

180

185

190

Ile Tyr Pro Met Val Leu Asn Tyr Leu Gly Lys Asn Pro Asn Ser Ser

195

200

205

Asn Thr Glu Asp Ile Arg Glu Ala Thr Ala Leu Leu Lys Lys Asn Arg

210

215

220

Pro Asn Ile Lys Arg Phe Thr Ser Ser Gly Phe Ile Asp Asp Leu Ala

225

230

235

240

Arg Gly Asp Thr Cys Val Thr Ile Gly Phe Gly Gly Asp Leu Asn Ile

245

250

255

Ala Lys Arg Arg Ala Glu Glu Ala Gly Gly Lys Glu Lys Ile Arg Val

260

265

270

Met Met Pro Lys Glu Gly Val Gly Ile Trp Val Asp Ser Phe Val Ile

275

280

285

Pro Lys Asp Ala Lys Asn Val Ala Asn Ala His Lys Tyr Ile Asn Asp

290

295

300

Phe Leu Asp Pro Glu Val Ser Ala Lys Asn Gly Asn Phe Val Thr Tyr

305

310

315

320

Ala Pro Ser Ser Lys Pro Ala Arg Glu Leu Met Glu Asp Glu Phe Lys

325

330

335

Asn Asp Asn Thr Ile Phe Pro Thr Glu Glu Asp Leu Lys Asn Ser Phe

340

345

350

Ile Met Val Pro Ile Gln Pro Ala Ala Leu Lys Phe Met Val Arg Gln

355

360

365

Trp Gln Asp Val Lys Ala Gly Lys

370

375

<210> 2789

<211> 1326

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2789

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<210> 2790

<211> 441

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2790

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                20                      25                      30
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Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Ala Gly Ile Pro Asp
        35                      40                      45
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Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val
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Pro His Leu Ser Met Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
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Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
                85                      90                      95
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Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
        100                      105                      110
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Gln Ala Lys Arg Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
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Leu	Lys	Gly	Asp	Gly	Arg	Arg	Thr	Glu	Arg	Ala	Arg	Phe	Pro	Ile	Tyr
145					150					155					160
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg
				165					170					175	
Gly	Gly	Lys	Asn	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly
			180					185					190		
Thr	Ile	Asp	Asn	Ala	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe
		195					200					205			
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		210				215					220				
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu
225					230					235					240
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu
			245						250					255	
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly
		260						265					270		
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val
		275					280					285			
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln
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Thr	Ser	Met	Gln	Gly	Ile	Lys	Ala	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg
305					310					315					320
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu
				325					330					335	
Leu	Ala	Gly	Ser	Gly	Asn	Glu	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro
			340					345					350		
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Ile	Asp	Arg	His	Tyr	Ile	Thr	Leu
		355					360					365			
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		370				375					380				
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385					390					395					400
Ala	Val	Arg	Val	Asp	Tyr	Phe	Trp	Gly	Tyr	Gly	Asp	Glu	Ala	Gly	Glu
				405					410					415	
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420

425

430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
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<210> 2791

<211> 1326

<212> DNA

<213> Neisseria meningitidis

<400> 2791

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tacgaaccgg tgctgaagggt cgacgacagg cggacggcac aagcccgtt cccgatttac 480
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<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 2792

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20

25

30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45

Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser

65				70				75				80					
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly		
				85					90					95			
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe		
				100					105					110			
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala		
				115					120					125			
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val		
				130					135					140			
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr		
145					150					155					160		
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg		
				165					170					175			
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly		
				180					185					190			
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe		
				195					200					205			
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser		
				210					215					220			
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu		
225					230					235					240		
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu		
				245					250					255			
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly		
				260					265					270			
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val		
				275					280					285			
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln		
				290					295					300			
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ser	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg		
305					310					315					320		
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu		
				325					330					335			
Leu	Ala	Gly	Ser	Ser	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro		
				340					345					350			
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Val	Asp	Arg	His	Tyr	Ile	Thr	Leu		
				355					360					365			
Gly	Ala	Pro	Leu	Phe	Val	Ala	Thr	Ala	His	Pro	Val	Thr	Arg	Lys	Ala		

370	375	380
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly		
385	390	395 400
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu		
	405	410 415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro		
	420	425 430
Asn Gly Met Lys Pro Glu Tyr Arg Pro		
435	440	

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 <212> DNA
 <213> Neisseria meningitidis

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<210> 2794
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 2794
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Pro	Ala	Gly	Thr	Thr	Val	Gly	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val	
50					55					60						
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser	
65					70					75					80	
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly	
85					90					95						
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Val	
100					105					110						
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala	
115					120					125						
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val	
130					135					140						
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr	
145					150					155					160	
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg	
165					170					175						
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly	
180					185					190						
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Gln	Phe	
195					200					205						
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser	
210					215					220						
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu	
225					230					235					240	
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu	
245					250					255						
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	
260					265					270						
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val	
275					280					285						
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln	
290					295					300						
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ala	Tyr	Met	Gln	Gln	Asn	Pro	Gln	Arg	
305					310					315					320	
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu	

	325		330		335
Leu Thr Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro					
	340		345		350
Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu					
	355		360		365
Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala					
	370		375		380
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly					
	385		390		395
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu					
	405		410		415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro					
	420		425		430
Asn Gly Met Lys Pro Glu Tyr Arg Pro					
	435		440		

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 <211> 624
 <212> DNA
 <213> Neisseria gonorrhoeae

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 caaatcgccc attctcacca ttaa 624

<210> 2796
 <211> 207
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2796
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35	40	45
Lys Ala Gly Trp Lys Gln Ala Gly Ile Lys Glu Met Pro Asp Ala Ser		
50	55	60
Tyr Cys Glu Gln Thr Arg Met Phe Gly Lys Asn Ile Val Asn Val Gly		
65	70	75
His Glu Ser Ala Asp Thr Ala Ile Ile Thr Lys Pro Val Gly Gln Asn		
	85	90
Leu Glu Ile Val Pro Leu Asp Asn Pro Ala Asp Ile His Val Gly Xaa		
	100	105
Arg Phe Lys Val Arg Val Leu Phe Arg Gly Glu Pro Leu Pro Asn Ala		
	115	120
Thr Val Thr Ala Thr Phe Asp Gly Phe Asp Thr Ser Asp Arg Ser Lys		
	130	135
Thr His Lys Thr Glu Ala Gln Ala Phe Ser Asp Thr Thr Asp Gly Glu		
	145	150
Gly Glu Val Asp Ile Ile Pro Leu Arg Gln Gly Phe Trp Lys Ala Ser		
	165	170
Val Glu Tyr Lys Ala Asp Phe Pro Asp Gln Ser Leu Cys Arg Lys Gln		
	180	185
Ala Asn Tyr Thr Thr Leu Thr Phe Gln Ile Ala His Ser His His		
	195	200

<210> 2797
 <211> 807
 <212> DNA
 <213> Neisseria meningitidis

<400> 2797

atgaagaaaa	cattgacact	gctctccggt	tccgccctat	ttgccacatc	cgcccacgcc	60
caccgmgtct	gggtcgaaac	cgcccacacg	cacggcggcg	aataccttaa	agccgacttg	120
ggctacggcg	aatttcccga	actcgaaccc	atcgccaaag	accgcctgca	catcttcagc	180
aaaccgatgc	agctgggttac	cgaaaaaggc	aaggaaaaca	tgattcaacg	cggcacatac	240
aactaccagt	accgaagcaa	ccgtcccgtt	aaggacggca	gttacctcgt	catcgccgaa	300
tatcagccta	ctttctggtc	aaaawacaaa	gcaggctgga	aacaggcggg	catcaaagaa	360
atgcctgacg	caagctattg	cgaacaaacc	cgaatgttcg	gcaaaaacat	cgtcaacgtc	420
ggacacgaaa	gcgcgggacac	cgccatcatc	accaarccgg	tcggacaaaa	cttggaatc	480
gtcccgtg	acaatcccgc	caacattcac	gtaggcgaac	gcttcaaagt	ccgcgttctg	540
ttccgtggcg	aaccgctgcc	caatgccacc	gttaccgcca	cctttgacgg	cttcgacacc	600
agcgaccgca	gcaaaacgca	caawmccgaa	gcacaggctt	tctccgacag	cacagacgac	660
aaaggcgaag	tggacatcat	cmccttgccg	caaggcttct	ggaaagccaa	tgtcgaacac	720
aaaaccgact	tcccgatca	aagcgtgtgc	caaaaacagg	cgaactactc	gactttaacc	780
ttccaaatcg	gtcattcgca	ccattaa				807

<210> 2798

<211> 268
<212> PRT
<213> Neisseria meningitidis

<400> 2798
Met Lys Lys Thr Leu Thr Leu Leu Ser Val Ser Ala Leu Phe Ala Thr
1 5 10 15
Ser Ala His Ala His Arg Val Trp Val Glu Thr Ala His Thr His Gly
20 25 30
Gly Glu Tyr Leu Lys Ala Asp Leu Gly Tyr Gly Glu Phe Pro Glu Leu
35 40 45
Glu Pro Ile Ala Lys Asp Arg Leu His Ile Phe Ser Lys Pro Met Gln
50 55 60
Leu Val Thr Glu Lys Gly Lys Glu Asn Met Ile Gln Arg Gly Thr Tyr
65 70 75 80
Asn Tyr Gln Tyr Arg Ser Asn Arg Pro Val Lys Asp Gly Ser Tyr Leu
85 90 95
Val Ile Ala Glu Tyr Gln Pro Thr Phe Trp Ser Lys Xaa Lys Ala Gly
100 105 110
Trp Lys Gln Ala Gly Ile Lys Glu Met Pro Asp Ala Ser Tyr Cys Glu
115 120 125
Gln Thr Arg Met Phe Gly Lys Asn Ile Val Asn Val Gly His Glu Ser
130 135 140
Ala Asp Thr Ala Ile Ile Thr Lys Pro Val Gly Gln Asn Leu Glu Ile
145 150 155 160
Val Pro Leu Asp Asn Pro Ala Asn Ile His Val Gly Glu Arg Phe Lys
165 170 175
Val Arg Val Leu Phe Arg Gly Glu Pro Leu Pro Asn Ala Thr Val Thr
180 185 190
Ala Thr Phe Asp Gly Phe Asp Thr Ser Asp Arg Ser Lys Thr His Xaa
195 200 205
Xaa Glu Ala Gln Ala Phe Ser Asp Ser Thr Asp Asp Lys Gly Glu Val
210 215 220
Asp Ile Ile Xaa Leu Arg Gln Gly Phe Trp Lys Ala Asn Val Glu His
225 230 235 240
Lys Thr Asp Phe Pro Asp Gln Ser Val Cys Gln Lys Gln Ala Asn Tyr
245 250 255
Ser Thr Leu Thr Phe Gln Ile Gly His Ser His His
260 265

<210> 2799
 <211> 807
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2799
 tgaagaaaa cattgacact gctcgccggtt tccgccctat ttgccgcatc cgcccacgcc 60
 caccgcgtct gggtcgaaac cgcccacacg cacggcgggcg aataccttaa agccgacttg 120
 ggctacggcg aatttcccgga actcgaaccc atcgccaaag accgcctgca catcttcagc 180
 aaaccgatgc agctggttac cgaaaaaggc aaggaaaaaca tgattcaacg cggcacatac 240
 aactaccagt accgaagcaa cgtgccggtt aaggacggca gttacctcgt catcgccgaa 300
 tatcagccta ctttctggtc aaaaaacaaa gcaggctgga aacaggcggg catcaaacaa 360
 atgcctgacg caagctattg cgaacaaacc cgaatgttcg gcaaaaacat cgtcaacgtc 420

 ggacacgaaa ggcgggacac cgccatcatc accaaaccgg tcggacaaaa cttggaaatc 480
 gtcccgtctg acaatcccgc caacattcac gtaggcgaac gcttcaaagt ccgcgttctg 540
 ttccgtggcg aaccgctgcc caatgccacc gttaccgcca cctttgacgg cttcgacacc 600
 agcgaccgca gcaaaacgca caaaaccgaa gcacaggctt tctccgacag cacagacgac 660
 aaaggcgaaq tggacatcat ccccttgccg caaggcttct ggaaagccaa tgcggaacac 720
 aaagccgact tccccgatca aagcgtgtgc caaaaacagg cgaactactc gactttaacc 780
 ttccaaatcg gccattcgca ccattaa 807

<210> 2800
 <211> 267
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2800
 Lys Lys Thr Leu Thr Leu Leu Ala Val Ser Ala Leu Phe Ala Ala Ser
 1 5 10 15
 Ala His Ala His Arg Val Trp Val Glu Thr Ala His Thr His Gly Gly
 20 25 30
 Glu Tyr Leu Lys Ala Asp Leu Gly Tyr Gly Glu Phe Pro Glu Leu Glu
 35 40 45
 Pro Ile Ala Lys Asp Arg Leu His Ile Phe Ser Lys Pro Met Gln Leu
 50 55 60
 Val Thr Glu Lys Gly Lys Glu Asn Met Ile Gln Arg Gly Thr Tyr Asn
 65 70 75 80
 Tyr Gln Tyr Arg Ser Asn Arg Pro Val Lys Asp Gly Ser Tyr Leu Val
 85 90 95
 Ile Ala Glu Tyr Gln Pro Thr Phe Trp Ser Lys Asn Lys Ala Gly Trp
 100 105 110
 Lys Gln Ala Gly Ile Lys Gln Met Pro Asp Ala Ser Tyr Cys Glu Gln
 115 120 125
 Thr Arg Met Phe Gly Lys Asn Ile Val Asn Val Gly His Glu Ser Ala
 130 135 140

Asp Thr Ala Ile Ile Thr Lys Pro Val Gly Gln Asn Leu Glu Ile Val
 145 150 155 160

Pro Leu Asp Asn Pro Ala Asn Ile His Val Gly Glu Arg Phe Lys Val
 165 170 175

Arg Val Leu Phe Arg Gly Glu Pro Leu Pro Asn Ala Thr Val Thr Ala
 180 185 190

Thr Phe Asp Gly Phe Asp Thr Ser Asp Arg Ser Lys Thr His Lys Thr
 195 200 205

Glu Ala Gln Ala Phe Ser Asp Ser Thr Asp Asp Lys Gly Glu Val Asp
 210 215 220

Ile Ile Pro Leu Arg Gln Gly Phe Trp Lys Ala Asn Val Glu His Lys
 225 230 235 240

Ala Asp Phe Pro Asp Gln Ser Val Cys Gln Lys Gln Ala Asn Tyr Ser
 245 250 255

Thr Leu Thr Phe Gln Ile Gly His Ser His His
 260 265

<210> 2801

<211> 807

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2801

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atgaagaaaa cattgacact gctcgccggt tccgcactat ttgccacatc cgcacacccc 60
caccgcgtct gggctgaaac cgccacacg cacggcggcg aataccttaa agccgacttg 120
ggctacggcg aattccccga actcgaaccc atcgccaaag accgcctgca catcttcagc 180
aaaccgatgc agctgggttac cgaaaaaggt aaggaaaaca tgattcaacg cggcacatac 240
aactaccaat accgcagcaa ccgtcccgtc aaagacggca gctacctcgt taccgccgaa 300
tatcagccta ctttcgggtc aaaaaacaaa gcaggtctgga aacaggctgg catcaaagaa 360
atgcctgacg caagctattg cgaacaaacc cgtatgttcg gtaaaaacat tgtcaacgtg 420
ggacacgaaa gcgcggacac cgccatcatc accaaaccgg tcggacaaaa cttggaaatc 480
gtcccgctgg acaatcccgc caacattcac gtaggcgaac gttcaaagt ccgcgttctg 540
ttccgtggcg aaccgctgcc caatgccacc gttaccgcta catttgacgg cttcgacacc 600
agcgaccgca gcaaaacgca caaaaccgaa gcccaagcct tctccgacac caccgacggc 660
aaaggcgaag tggacatcat ccccttgccg caaggctttt ggaaagcgag tgtcgaatac 720
aaagccgatt tccccgatca aagcctgtgc caaaaacagg cgaactacac aactttaacc 780
ttccaaatcg gccattctca ccattaa 807
```

<210> 2802

<211> 268

<212> PRT

<213> Neisseria meningitidis

<400> 2802

Met Lys Lys Thr Leu Thr Leu Leu Ala Val Ser Ala Leu Phe Ala Thr
 1 5 10 15

Ser Ala His Pro His Arg Val Trp Val Glu Thr Ala His Thr His Gly
 20 25 30
 Gly Glu Tyr Leu Lys Ala Asp Leu Gly Tyr Gly Glu Phe Pro Glu Leu
 35 40 45
 Glu Pro Ile Ala Lys Asp Arg Leu His Ile Phe Ser Lys Pro Met Gln
 50 55 60
 Leu Val Thr Glu Lys Gly Lys Glu Asn Met Ile Gln Arg Gly Thr Tyr
 65 70 75 80
 Asn Tyr Gln Tyr Arg Ser Asn Arg Pro Val Lys Asp Gly Ser Tyr Leu
 85 90 95
 Val Thr Ala Glu Tyr Gln Pro Thr Phe Arg Ser Lys Asn Lys Ala Gly
 100 105 110
 Trp Lys Gln Ala Gly Ile Lys Glu Met Pro Asp Ala Ser Tyr Cys Glu
 115 120 125
 Gln Thr Arg Met Phe Gly Lys Asn Ile Val Asn Val Gly His Glu Ser
 130 135 140
 Ala Asp Thr Ala Ile Ile Thr Lys Pro Val Gly Gln Asn Leu Glu Ile
 145 150 155 160
 Val Pro Leu Asp Asn Pro Ala Asn Ile His Val Gly Glu Arg Phe Lys
 165 170 175
 Val Arg Val Leu Phe Arg Gly Glu Pro Leu Pro Asn Ala Thr Val Thr
 180 185 190
 Ala Thr Phe Asp Gly Phe Asp Thr Ser Asp Arg Ser Lys Thr His Lys
 195 200 205
 Thr Glu Ala Gln Ala Phe Ser Asp Thr Thr Asp Gly Lys Gly Glu Val
 210 215 220
 Asp Ile Ile Pro Leu Arg Gln Gly Phe Trp Lys Ala Ser Val Glu Tyr
 225 230 235 240
 Lys Ala Asp Phe Pro Asp Gln Ser Leu Cys Gln Lys Gln Ala Asn Tyr
 245 250 255
 Thr Thr Leu Thr Phe Gln Ile Gly His Ser His His
 260 265

<210> 2803

<211> 807

<212> DNA

<213> *Neisseria meningitidis*

<400> 2803

atgaagaaaa cattgacact gctcgccgtt tccgccctat ttgccacatc cgccacgcc 60
 caccgcgtct gggtcgaaac cgccacacg cacggcggcg aataccttaa agccgacttg 120

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ggctacggcg aatttcccg aactcgaaccc atcgccaaag accgcctgca catcttcagc 180
aaaccgatgc agctggttac cgaaaaaggc aaggaaaaca tgattcaacg cggcacatac 240
aactaccagt accgaagcaa ccgtcccgtt aaggacggca gttacctcgt catcgccgaa 300
tatcagccta ctttctggtc aaaaaacaaa gcaggctgga aacaggcggg catcaaagaa 360
atgcctgacg caagctattg cgaacaaacc cgaatgttcg gcaaaaacat cgtcaacgtc 420
ggacacgaaa gcgcggacac cgccatcatc accaaaccgg tcggacaaaa cttggaaaatc 480
gtcccgtggtg acaatcccgc caacattcac gtaggcgaac gcttcaaagt ccgcgttctg 540
ttccgtggcg aaccgctgcc caatgccacc gttaccgcca cctttgacgg cttcgacacc 600
agcgaccgca gcaaaacgca caaaaccgaa gcacaggctt tctccgacag cacagacgac 660
aaaggcgaag tggacatcat ccccttgccg caaggcttct ggaaagccaa tgtcgaacac 720
aaaaccgact tccccgatca aagcgtgtgc caaaaacagg cgaactactc gactttaacc 780
ttccaaatcg gtcattcgca ccattaa
807

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<210> 2804

<211> 268

<212> PRT

<213> *Neisseria meningitidis*

<400> 2804

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Met Lys Lys Thr Leu Thr Leu Leu Ala Val Ser Ala Leu Phe Ala Thr
  1                      5                      10                      15

Ser Ala His Ala His Arg Val Trp Val Glu Thr Ala His Thr His Gly
          20                      25                      30

Gly Glu Tyr Leu Lys Ala Asp Leu Gly Tyr Gly Glu Phe Pro Glu Leu
      35                      40                      45

Glu Pro Ile Ala Lys Asp Arg Leu His Ile Phe Ser Lys Pro Met Gln
      50                      55                      60

Leu Val Thr Glu Lys Gly Lys Glu Asn Met Ile Gln Arg Gly Thr Tyr
      65                      70                      75                      80

Asn Tyr Gln Tyr Arg Ser Asn Arg Pro Val Lys Asp Gly Ser Tyr Leu
          85                      90                      95

Val Ile Ala Glu Tyr Gln Pro Thr Phe Trp Ser Lys Asn Lys Ala Gly
      100                      105                      110

Trp Lys Gln Ala Gly Ile Lys Glu Met Pro Asp Ala Ser Tyr Cys Glu
      115                      120                      125

Gln Thr Arg Met Phe Gly Lys Asn Ile Val Asn Val Gly His Glu Ser
      130                      135                      140

Ala Asp Thr Ala Ile Ile Thr Lys Pro Val Gly Gln Asn Leu Glu Ile
      145                      150                      155                      160

Val Pro Leu Asp Asn Pro Ala Asn Ile His Val Gly Glu Arg Phe Lys
          165                      170                      175

Val Arg Val Leu Phe Arg Gly Glu Pro Leu Pro Asn Ala Thr Val Thr
      180                      185                      190

Ala Thr Phe Asp Gly Phe Asp Thr Ser Asp Arg Ser Lys Thr His Lys

```

195 200 205

Thr Glu Ala Gln Ala Phe Ser Asp Ser Thr Asp Asp Lys Gly Glu Val
 210 215 220

Asp Ile Ile Pro Leu Arg Gln Gly Phe Trp Lys Ala Asn Val Glu His
 225 230 235 240

Lys Thr Asp Phe Pro Asp Gln Ser Val Cys Gln Lys Gln Ala Asn Tyr
 245 250 255

Ser Thr Leu Thr Phe Gln Ile Gly His Ser His His
 260 265

<210> 2805
 <211> 807
 <212> DNA
 <213> Neisseria meningitidis

<400> 2805

tgaagaaaa cattgacact gctcgccggt tccgccctat ttgccgcac cgcccacgcc 60
 caccgcgtct gggtcgaaac cgcccacacg cacggcggcg aataccttaa agccgacttg 120
 ggctacggcg aatttccga actcgaaccc atcgccaaag accgcctgca catcttcagc 180
 aaaccgatgc agctggttac cgaaaaaggc aaggaaaaca tgattcaacg cggcacatac 240
 aactaccagt accgaagcaa ccgtcccgtt aaggacggca gttacctcgt catcgccgaa 300
 tatcagccta ctttctggtc aaaaaacaaa gcaggctgga aacaggcggg catcaaacaa 360
 atgcctgacg caagctattg cgaacaaacc cgaatgttcg gcaaaaacat cgtcaacgtc 420
 ggacacgaaa gcgcggacac cgccatcatc accaaaccgg tcggacaaaa cttggaaatc 480
 gtcccgttg acaatcccgc caacattcac gtaggcgaac gttcaaagt ccgcgttctg 540
 ttccgtggcg aaccgctgcc caatgccacc gttaccgcca ctttgacgg cttcgacacc 600
 agcgaccgca gcaaaacgca caaaaccgaa gcacaggctt tctccgacag cacagacgac 660
 aaaggcgaag tggacatcat ccccttgccg caaggcttct ggaaagccaa tgtcgaacac 720
 aaagccgact tccccgatca aagcgtgtgc caaaaacagg cgaactactc gactttaacc 780
 ttccaaatcg gccattcgca ccattaa 807

<210> 2806
 <211> 267
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2806

Lys Lys Thr Leu Thr Leu Leu Ala Val Ser Ala Leu Phe Ala Ala Ser
 1 5 10 15

Ala His Ala His Arg Val Trp Val Glu Thr Ala His Thr His Gly Gly
 20 25 30

Glu Tyr Leu Lys Ala Asp Leu Gly Tyr Gly Glu Phe Pro Glu Leu Glu
 35 40 45

Pro Ile Ala Lys Asp Arg Leu His Ile Phe Ser Lys Pro Met Gln Leu
 50 55 60

Val Thr Glu Lys Gly Lys Glu Asn Met Ile Gln Arg Gly Thr Tyr Asn

65		70		75		80									
Tyr	Gln	Tyr	Arg	Ser	Asn	Arg	Pro	Val	Lys	Asp	Gly	Ser	Tyr	Leu	Val
				85					90					95	
Ile	Ala	Glu	Tyr	Gln	Pro	Thr	Phe	Trp	Ser	Lys	Asn	Lys	Ala	Gly	Trp
		100						105					110		
Lys	Gln	Ala	Gly	Ile	Lys	Gln	Met	Pro	Asp	Ala	Ser	Tyr	Cys	Glu	Gln
		115					120					125			
Thr	Arg	Met	Phe	Gly	Lys	Asn	Ile	Val	Asn	Val	Gly	His	Glu	Ser	Ala
	130					135					140				
Asp	Thr	Ala	Ile	Ile	Thr	Lys	Pro	Val	Gly	Gln	Asn	Leu	Glu	Ile	Val
145					150					155					160
Pro	Leu	Asp	Asn	Pro	Ala	Asn	Ile	His	Val	Gly	Glu	Arg	Phe	Lys	Val
			165						170					175	
Arg	Val	Leu	Phe	Arg	Gly	Glu	Pro	Leu	Pro	Asn	Ala	Thr	Val	Thr	Ala
		180						185					190		
Thr	Phe	Asp	Gly	Phe	Asp	Thr	Ser	Asp	Arg	Ser	Lys	Thr	His	Lys	Thr
	195						200					205			
Glu	Ala	Gln	Ala	Phe	Ser	Asp	Ser	Thr	Asp	Asp	Lys	Gly	Glu	Val	Asp
	210					215					220				
Ile	Ile	Pro	Leu	Arg	Gln	Gly	Phe	Trp	Lys	Ala	Asn	Val	Glu	His	Lys
225				230					235						240
Ala	Asp	Phe	Pro	Asp	Gln	Ser	Val	Cys	Gln	Lys	Gln	Ala	Asn	Tyr	Ser
			245					250						255	
Thr	Leu	Thr	Phe	Gln	Ile	Gly	His	Ser	His	His					
		260						265							

<210> 2807

<211> 489

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 2807

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atgaaaaaat accttatccc tctttccatt gcggcagtc tttccgggtg ccagtctatt 60
tatgtgccc cattgacgga aatccccgtg aatcccatca ataccgtcaa aacggaagca 120
cctgcaaaag gttttcgct cgccccttcg cattgggcgg atgttgccaa aatcagcgat 180
gaagcgacgc gcttgggcta tcaggtgggt atcggtaaaa tgaccaaggt tcaggcggcg 240
caatatctga acaacttcag aaaacgcctg gtcggacgca atgccgtcga tgacagtatg 300
tatgaaatct acctgcgttc ggcggtagac agccagcgcg gcgaaatcaa tacggaacag 360
tccaagctgt atatcgagaa tgccttgccg ggctggcagc agcgttgga aaatatggat 420
gccaaacccg ataatccgcg atttaccac tttttgatgg aagtgatgaa gatgcagccc 480
ttgaaatga                                     489

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<210> 2808

<211> 162
 <212> PRT
 <213> Neisseria meningitidis

<400> 2808
 Met Lys Lys Tyr Leu Ile Pro Leu Ser Ile Ala Ala Val Leu Ser Gly
 1 5 10 15
 Cys Gln Ser Ile Tyr Val Pro Thr Leu Thr Glu Ile Pro Val Asn Pro
 20 25 30
 Ile Asn Thr Val Lys Thr Glu Ala Pro Ala Lys Gly Phe Arg Leu Ala
 35 40 45
 Pro Ser His Trp Ala Asp Val Ala Lys Ile Ser Asp Glu Ala Thr Arg
 50 55 60
 Leu Gly Tyr Gln Val Gly Ile Gly Lys Met Thr Lys Val Gln Ala Ala
 65 70 75 80
 Gln Tyr Leu Asn Asn Phe Arg Lys Arg Leu Val Gly Arg Asn Ala Val
 85 90 95
 Asp Asp Ser Met Tyr Glu Ile Tyr Leu Arg Ser Ala Val Asp Ser Gln
 100 105 110
 Arg Gly Glu Ile Asn Thr Glu Gln Ser Lys Leu Tyr Ile Glu Asn Ala
 115 120 125
 Leu Arg Gly Trp Gln Gln Arg Trp Lys Asn Met Asp Ala Lys Pro Asp
 130 135 140
 Asn Pro Ala Phe Thr Asn Phe Leu Met Glu Val Met Lys Met Gln Pro
 145 150 155 160
 Leu Lys

<210> 2809
 <211> 489
 <212> DNA
 <213> Neisseria meningitidis

<400> 2809
 atgaaaaaat accttatccc tctttccatt gcggcagttc tttccggctg ccagtctatt 60
 tatgtgcca cattgacgga aatccccgtg aatcctatca ataccgtcaa aacggaagca 120
 cctgcaaaaag gtttccgcct tgcctcttcg cattggacgg atgttgccaa aatcagcgat 180
 gaagcgacgc gcttgggcta tcaggtgggt atcggtaaaa tgaccaaggt tcaggcggcg 240
 caatatctga acaacttcag aaaacgcctg gtccgacgca atgccgtcga tgacagtatg 300
 tatgaaatct acctgcgttc ggcgatagac agccagcggg gcgcaatcaa tacggaacag 360
 tccaagctgt atatccagaa tgccttgccg ggctggcagc agcgttgga aaatatggat 420
 gtcaaaccga acaacccgcg atttaccac tttttgatgg aagtgatgaa gatgcagccc 480
 ttgaaatga

<210> 2810

<211> 162
<212> PRT
<213> *Neisseria meningitidis*

<400> 2810

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Met Lys Lys Tyr Leu Ile Pro Leu Ser Ile Ala Ala Val Leu Ser Gly
 1           5           10           15

Cys Gln Ser Ile Tyr Val Pro Thr Leu Thr Glu Ile Pro Val Asn Pro
          20           25           30

Ile Asn Thr Val Lys Thr Glu Ala Pro Ala Lys Gly Phe Arg Leu Ala
          35           40           45

Ser Ser His Trp Thr Asp Val Ala Lys Ile Ser Asp Glu Ala Thr Arg
          50           55           60

Leu Gly Tyr Gln Val Gly Ile Gly Lys Met Thr Lys Val Gln Ala Ala
          65           70           75           80

Gln Tyr Leu Asn Asn Phe Arg Lys Arg Leu Val Gly Arg Asn Ala Val
          85           90           95

Asp Asp Ser Met Tyr Glu Ile Tyr Leu Arg Ser Ala Ile Asp Ser Gln
          100          105          110

Arg Gly Ala Ile Asn Thr Glu Gln Ser Lys Leu Tyr Ile Gln Asn Ala
          115          120          125

Leu Arg Gly Trp Gln Gln Arg Trp Lys Asn Met Asp Val Lys Pro Asn
          130          135          140

Asn Pro Ala Phe Thr Asn Phe Leu Met Glu Val Met Lys Met Gln Pro
          145          150          155          160

Leu Lys
```

<210> 2811
<211> 489
<212> DNA
<213> *Neisseria meningitidis*

<400> 2811

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tatgtgccca cattgacgga aatccccgtg aatcctatca ataccgtcaa aacggaagca 120
cctgcaaaaag gtttccgcct tgcctcttcg cattggacgg atgttgccaa aatcagcgat 180
gaagcgacgc gcttgggcta tcaggtgggt atcggtaaaa tgaccaaggt tcaggcggcg 240
caatatctga acaacttcag aaaacgcctg gtcggacgca atgccgtcga tgacagtatg 300
tatgaaatct acctgcgttc ggcgatagac agccagcggg gcgcaatcaa tacggaacag 360
tccaagctgt atatccagaa tgccttgccg ggctggcagc agcgttgga aaatatggat 420
gtcaaaccga acaacccgcg atttaccac tttttgatgg aagtgatgaa gatgcagccc 480
ttgaaatga
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<210> 2812

<211> 162
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2812

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Met Lys Lys Tyr Leu Ile Pro Leu Ser Ile Val Ala Val Leu Ser Gly
 1           5           10           15

Cys Gln Ser Ile Tyr Val Pro Thr Leu Thr Glu Ile Pro Val Asn Pro
          20           25           30

Ile Asn Thr Val Lys Thr Glu Ala Pro Ala Lys Gly Phe Arg Leu Ala
          35           40           45

Ser Ser His Trp Thr Asp Val Ala Lys Ile Ser Asp Glu Ala Thr Arg
          50           55           60

Leu Gly Tyr Gln Val Gly Ile Gly Lys Met Thr Lys Val Gln Ala Ala
          65           70           75           80

Gln Tyr Leu Asn Asn Phe Arg Lys Arg Leu Val Gly Arg Asn Ala Val
          85           90           95

Asp Asp Ser Met Tyr Glu Ile Tyr Leu Arg Ser Ala Ile Asp Ser Gln
          100          105          110

Arg Gly Ala Ile Asn Thr Glu Gln Ser Lys Leu Tyr Ile Gln Asn Ala
          115          120          125

Leu Arg Gly Trp Gln Gln Arg Trp Lys Asn Met Asp Val Lys Pro Asn
          130          135          140

Asn Pro Ala Phe Thr Asn Phe Leu Met Glu Val Met Lys Met Gln Pro
          145          150          155          160

Leu Lys
  
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<210> 2813
 <211> 1092
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2813

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atggaaaaga gaaaaataact gccgctggca atttgtttgg cggttttgtc tgctgtacg 60
gcgatggagg ccgcacacac ccgggcaaat gaagcccaag ccccccgcgc ggatgaaatg 120
aaaaaagaaa gccgccccgc gtttgacgcg gcagccgtac cggatatccga cagcgggttt 180
gccgccaatg caaatgtccg ccgttttgtg gacgatgaag tcgggaaagg ggatttttcc 240
caggcggaat ggcaggattt ttttgacaaa gcggttaca aggcggacat cgtcaagatt 300
atgcaccgac cctccacatc gcgtccgtgg tatgtgttcc gcacgggaaa ttcgggcagg 360
gcgaaatttc acggcgcgcg caggttttat gcggaaaacc gcgcggttat cgatgatgtg 420
gcgcaaaaat acggcgtgcc tgccgagctt atcgtggcga ttatcgggat tgaaacgaat 480
tacggcaaaa atacgggcag tttcgtgtg gcggacgcat tggcgacttt aggtttgat 540
tatccccgcc gcgccgggtt tttccaaaaa gaattggctg agctttttaa gctggcaaaa 600
gaagaaggcg gtgatgtttt cgcctttaag ggcagctatg cgggtgcaat gggtatgccg 660
  
```



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caatttatgc cttecgagcta ccggaaatgg gcggtggatt atgacgggga cggacatcgg 720
gatatatggg gcaacgtcgg tgatgtcgcg gcatcggttg ccaattatat gaagcagcac 780
ggttggcgca cgggcggtaa aatgttgggtg tcggcgacgt tggcgccggg tgcggatggt 840
caggcaatca ttggcgaaaa aaccgccctg acgcggacgg tggcggattt gaaggcgtac 900
ggcatcatcc ccggggaaac gctcgcagat gatgaaaagg cggttttggt caaactggaa 960
accgcacccg gcgtgtttga atattatttg ggcttgaaca atttttatac ggtatggcag 1020
tacaaccaca gccggatgta tgtaacggcg gtcagggaca ttgccaatc gctcggcggc 1080
ccgggattgt aa 1092

```

<210> 2814

<211> 363

<212> PRT

<213> *Neisseria meningitidis*

<400> 2814

```

Met Glu Lys Arg Lys Ile Leu Pro Leu Ala Ile Cys Leu Ala Ala Leu
  1             5             10             15

```

```

Ser Ala Cys Thr Ala Met Glu Ala Arg Thr Pro Arg Ala Asn Glu Ala
      20             25             30

```

```

Gln Ala Pro Arg Ala Asp Glu Met Lys Lys Glu Ser Arg Pro Ala Phe
     35             40             45

```

```

Asp Ala Ala Ala Val Pro Val Ser Asp Ser Gly Phe Ala Ala Asn Ala
    50             55             60

```

```

Asn Val Arg Arg Phe Val Asp Asp Glu Val Gly Lys Gly Asp Phe Ser
    65             70             75             80

```

```

Gln Ala Glu Trp Gln Asp Phe Phe Asp Lys Ala Ala Tyr Lys Ala Asp
     85             90             95

```

```

Ile Val Lys Ile Met His Arg Pro Ser Thr Ser Arg Pro Trp Tyr Val
    100            105            110

```

```

Phe Arg Thr Gly Asn Ser Gly Arg Ala Lys Phe His Gly Ala Arg Arg
    115            120            125

```

```

Phe Tyr Ala Glu Asn Arg Ala Val Ile Asp Asp Val Ala Gln Lys Tyr
    130            135            140

```

```

Gly Val Pro Ala Glu Leu Ile Val Ala Ile Ile Gly Ile Glu Thr Asn
   145            150            155            160

```

```

Tyr Gly Lys Asn Thr Gly Ser Phe Arg Val Ala Asp Ala Leu Ala Thr
    165            170            175

```

```

Leu Gly Phe Asp Tyr Pro Arg Arg Ala Gly Phe Phe Gln Lys Glu Leu
    180            185            190

```

```

Val Glu Leu Leu Lys Leu Ala Lys Glu Glu Gly Gly Asp Val Phe Ala
    195            200            205

```

```

Phe Lys Gly Ser Tyr Ala Gly Ala Met Gly Met Pro Gln Phe Met Pro
    210            215            220

```

Ser Ser Tyr Arg Lys Trp Ala Val Asp Tyr Asp Gly Asp Gly His Arg
 225 230 235 240

Asp Ile Trp Gly Asn Val Gly Asp Val Ala Ala Ser Val Ala Asn Tyr
 245 250 255

Met Lys Gln His Gly Trp Arg Thr Gly Gly Lys Met Leu Val Ser Ala
 260 265 270

Thr Leu Ala Pro Gly Ala Asp Val Gln Ala Ile Ile Gly Glu Lys Thr
 275 280 285

Ala Leu Thr Arg Thr Val Ala Asp Leu Lys Ala Tyr Gly Ile Ile Pro
 290 295 300

Gly Glu Thr Leu Ala Asp Asp Glu Lys Ala Val Leu Phe Lys Leu Glu
 305 310 315 320

Thr Ala Pro Gly Val Phe Glu Tyr Tyr Leu Gly Leu Asn Asn Phe Tyr
 325 330 335

Thr Val Trp Gln Tyr Asn His Ser Arg Met Tyr Val Thr Ala Val Arg
 340 345 350

Asp Ile Ala Asn Ser Leu Gly Gly Pro Gly Leu
 355 360

<210> 2815

<211> 1110

<212> DNA

<213> Neisseria meningitidis

<400> 2815

```

atgaaaaaga gaaaaatact gccgctggca atttgtttgg cggttttgtc tgccgtgtacg 60
gcgatggagg cacgcccacc cggggcaa at gaagcccaag cccccgcgc gggtgaaatg 120
aaaaaagaaa gccgccccgc gtttgacgcg gcagccgtat ttgacgcgcg agccgtaccg 180
gtatccgaca gcgggtttgc cgccaatgca aatgtccgcc gttttgtgga cgatgaagtc 240
gggaaagggg atttttcccg ggcggaatgg caggattttt ttgacaaagc ggcttacaag 300
gcggacatcg tcaagattat gcaccgcccc tccacatcgc gtccgtggta tgtgttccgc 360
acgggaaatt cgggcaaggc gaaaatttcgc ggcgcgcgcc ggtttttatgc ggaaaaccgc 420
gcgcttatcg atgatgtggc gcaaaaatac ggctgcctg ccgaacttat cgtggcggtt 480
atcgggattg aaacgaatta cggcaaaaat acgggcagtt tccgtgtggc ggacgcattg 540
gcgaccttag gctttgatta cccccgcgcg gccgggtttt tccaaaaaga attggtcgag 600
cttttaaagc tggcaaaaga agaaggcggc gatgttttcg ctttaaagg cagctatgcg 660
ggcgcaatgg ggatgccgca atttatgcct tcgagctacc ggaaatgggc ggtggattat 720
gacggggacg gacatcggga catatggggc aacgtcggcg atgtcggcg atcggttgcc 780
aattatatga agcagcacgg ttggcgcacg ggcgggaaaa tgctgggtgc tgcaacattg 840
gcgcggggtg cggatgttca ggcaatcatt gccgaaaaaa ccgccctgac gcggacgggtg 900
gcggatttga agcgtaacgg catcatcccc ggcaagagc ttgcagatga tgaaaaggcg 960
gttttgttca aactgaaac cgcaccgggc gtgtttgaat attatttggg cttgaacaat 1020
ttttatacgg tatggcagta caaccacagc cggatgtatg taacggcggt cagggacatt 1080
gccaattcgc ttggcgggccc gggattgtaa 1110

```

<210> 2816
<211> 369
<212> PRT
<213> Neisseria meningitidis

<400> 2816

```
Met Lys Lys Arg Lys Ile Leu Pro Leu Ala Ile Cys Leu Ala Ala Leu
  1           5           10           15

Ser Ala Cys Thr Ala Met Glu Ala Arg Pro Pro Arg Ala Asn Glu Ala
      20           25           30

Gln Ala Pro Arg Ala Val Glu Met Lys Lys Glu Ser Arg Pro Ala Phe
      35           40           45

Asp Ala Ala Ala Val Phe Asp Ala Ala Ala Val Pro Val Ser Asp Ser
      50           55           60

Gly Phe Ala Ala Asn Ala Asn Val Arg Arg Phe Val Asp Asp Glu Val
      65           70           75           80

Gly Lys Gly Asp Phe Ser Arg Ala Glu Trp Gln Asp Phe Phe Asp Lys
      85           90           95

Ala Ala Tyr Lys Ala Asp Ile Val Lys Ile Met His Arg Pro Ser Thr
      100          105          110

Ser Arg Pro Trp Tyr Val Phe Arg Thr Gly Asn Ser Gly Lys Ala Lys
      115          120          125

Phe Arg Gly Ala Arg Arg Phe Tyr Ala Glu Asn Arg Ala Leu Ile Asp
      130          135          140

Asp Val Ala Gln Lys Tyr Gly Val Pro Ala Glu Leu Ile Val Ala Val
      145          150          155          160

Ile Gly Ile Glu Thr Asn Tyr Gly Lys Asn Thr Gly Ser Phe Arg Val
      165          170          175

Ala Asp Ala Leu Ala Thr Leu Gly Phe Asp Tyr Pro Arg Arg Ala Gly
      180          185          190

Phe Phe Gln Lys Glu Leu Val Glu Leu Leu Lys Leu Ala Lys Glu Glu
      195          200          205

Gly Gly Asp Val Phe Ala Phe Lys Gly Ser Tyr Ala Gly Ala Met Gly
      210          215          220

Met Pro Gln Phe Met Pro Ser Ser Tyr Arg Lys Trp Ala Val Asp Tyr
      225          230          235          240

Asp Gly Asp Gly His Arg Asp Ile Trp Gly Asn Val Gly Asp Val Ala
      245          250          255

Ala Ser Val Ala Asn Tyr Met Lys Gln His Gly Trp Arg Thr Gly Gly
      260          265          270
```

Lys Met Leu Val Ser Ala Thr Leu Ala Pro Gly Ala Asp Val Gln Ala
275 280 285

Ile Ile Gly Glu Lys Thr Ala Leu Thr Arg Thr Val Ala Asp Leu Lys
290 295 300

Ala Tyr Gly Ile Ile Pro Gly Glu Glu Leu Ala Asp Asp Glu Lys Ala
305 310 315 320

Val Leu Phe Lys Leu Glu Thr Ala Pro Gly Val Phe Glu Tyr Tyr Leu
325 330 335

Gly Leu Asn Asn Phe Tyr Thr Val Trp Gln Tyr Asn His Ser Arg Met
340 345 350

Tyr Val Thr Ala Val Arg Asp Ile Ala Asn Ser Leu Gly Gly Pro Gly
355 360 365

Leu

<210> 2817

<211> 1110

<212> DNA

<213> *Neisseria meningitidis*

<400> 2817

atgaaaaaca gaaaaatact gccgctggca atttgtttgg cggctttgtc tgccgtgtacg 60
gcgatggagg cacgcccgcc ccggggcaaat gaagcccaag cccccgcgc ggatgaaatg 120
aaaaaagaaa gccgcccgc gtttgacgcg gcagccgtat ttgacgcgc agccgtaccg 180
gtatccgaca gcgggtttgc cgccaatgca aatgtccgcc gttttgtgga cgatgaagtc 240
gggaaagggg atttttccg gcggaatgg caggattttt ttgacaaagc ggcttacaag 300
gcggacatcg tcaagattat gcaccgcccc tccacatcgc gtccgtggta tgtgttccgc 360

acgggaaatt cgggcaaggc gaaatttcgc ggcgcgcgcc ggttttatgc ggaaaaccgc 420
gcgcttatcg atgatgtggc gcaaaaatac ggcggtgcctg ccgaacttat cgtggcggtt 480
atcgggattg aaacgaatta cggcaaaaat acgggcagtt tccgtgtggc ggacgcattg 540
gcgaccttag gctttgatta cccccgccgc gccgggtttt tccaaaaaga attggtcgag 600
cttttaaagc tggcaaaaga agaaggcggc gatgttttcg cttttaaaag cagctatgcg 660
ggcgcaatgg ggatgccga atttatgcct tcgagctacc ggaaatgggc ggtggattat 720
gacggggacg gacatcgga catatggggc aatgttgcg atgtcgcgc atcgattgcc 780
aattatatga agcagcacgg ttggcgcacg ggcggaataa tactgggtgc tgcaacattg 840
gcgccgggtg cggatgttca ggcaatcatt ggcgaaaaaa ccgccctgac gcggacggtg 900
gcggatttga aggcgtacgg catcatcccc ggcgaaagagc ttgccgatga tgaaaaggcg 960
gttttgttca aactggaac cgcaccgcgc gtgtttgaat attatttggg cttgaacaat 1020
ttttatacgg tatggcagta caatcacagt cggatgtatg taacggcggt cagggacatt 1080
gccaattcgc ttggcgcccc gggattgtaa 1110

<210> 2818

<211> 369

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 2818

Met Lys Asn Arg Lys Ile Leu Pro Leu Ala Ile Cys Leu Ala Ala Leu

1	5	10	15
Ser Ala Cys Thr Ala Met Glu Ala Arg Pro Pro Arg Ala Asn Glu Ala	20	25	30
Gln Ala Pro Arg Ala Asp Glu Met Lys Lys Glu Ser Arg Pro Ala Phe	35	40	45
Asp Ala Ala Ala Val Phe Asp Ala Ala Ala Val Pro Val Ser Asp Ser	50	55	60
Gly Phe Ala Ala Asn Ala Asn Val Arg Arg Phe Val Asp Asp Glu Val	65	70	75
Gly Lys Gly Asp Phe Ser Arg Ala Glu Trp Gln Asp Phe Phe Asp Lys	85	90	95
Ala Ala Tyr Lys Ala Asp Ile Val Lys Ile Met His Arg Pro Ser Thr	100	105	110
Ser Arg Pro Trp Tyr Val Phe Arg Thr Gly Asn Ser Gly Lys Ala Lys	115	120	125
Phe Arg Gly Ala Arg Arg Phe Tyr Ala Glu Asn Arg Ala Leu Ile Asp	130	135	140
Asp Val Ala Gln Lys Tyr Gly Val Pro Ala Glu Leu Ile Val Ala Val	145	150	155
Ile Gly Ile Glu Thr Asn Tyr Gly Lys Asn Thr Gly Ser Phe Arg Val	165	170	175
Ala Asp Ala Leu Ala Thr Leu Gly Phe Asp Tyr Pro Arg Arg Ala Gly	180	185	190
Phe Phe Gln Lys Glu Leu Val Glu Leu Leu Lys Leu Ala Lys Glu Glu	195	200	205
Gly Gly Asp Val Phe Ala Phe Lys Gly Ser Tyr Ala Gly Ala Met Gly	210	215	220
Met Pro Gln Phe Met Pro Ser Ser Tyr Arg Lys Trp Ala Val Asp Tyr	225	230	235
Asp Gly Asp Gly His Arg Asp Ile Trp Gly Asn Val Gly Asp Val Ala	245	250	255
Ala Ser Ile Ala Asn Tyr Met Lys Gln His Gly Trp Arg Thr Gly Gly	260	265	270
Lys Ile Leu Val Ser Ala Thr Leu Ala Pro Gly Ala Asp Val Gln Ala	275	280	285
Ile Ile Gly Glu Lys Thr Ala Leu Thr Arg Thr Val Ala Asp Leu Lys	290	295	300
Ala Tyr Gly Ile Ile Pro Gly Glu Glu Leu Ala Asp Asp Glu Lys Ala			

100	105	110
Pro Glu Leu Phe Val Lys Leu Gly Gln His Leu		
115	120	

<210> 2821
 <211> 476
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2821
 atgaagcggc aggctttctt caaactgatg gcgtgtgcgg catttctgtc tgccgtttcg 60
 ctgcgcctcc ccgtattggg cgcgtgttac gcaatattgt ccctctatgc gtttgacttt 120
 tacggcatcg acaaacgggtg cgccatacgg gggcaacgcc gcattcccga acaccgcctg 180
 ctgctgcctg cattgctcgg cggctgggtg ggcgcgatt tcggcagcat gacattcaaa 240
 cataagacag cgaaaaagcg ttttggtgtg ctgttccgtc tgactgtttc aggtaatgtc 300
 ttggcgaccc tcatactgat ttatagtga ttaaatttaa accagtacgg cgttgcctcg 360
 ccttgccgta ctatttgtac tgtctgcggc ttcgtcgcc tgcctgatt tttgttaatc 420
 cactatatta ttttgtcccg cctgaatttt tcgtaaaact cgggcagaat acctga 476

<210> 2822
 <211> 157
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2822
 Met Lys Arg Gln Ala Phe Phe Lys Leu Met Ala Cys Ala Ala Phe Leu
 1 5 10 15
 Ser Ala Val Ser Leu Arg Leu Pro Val Leu Gly Ala Cys Tyr Ala Ile
 20 25 30
 Leu Ser Leu Tyr Ala Phe Ala Leu Tyr Gly Ile Asp Lys Arg Cys Ala
 35 40 45
 Ile Arg Gly Gln Arg Arg Ile Pro Glu His Arg Leu Leu Leu Pro Ala
 50 55 60
 Leu Leu Gly Gly Trp Val Gly Ala Tyr Phe Gly Ser Met Thr Phe Lys
 65 70 75 80
 His Lys Thr Ala Lys Lys Arg Phe Val Val Leu Phe Arg Leu Thr Val
 85 90 95
 Ser Gly Asn Val Leu Ala Thr Leu Ile Leu Ile Tyr Ser Gly Leu Asn
 100 105 110
 Leu Asn Gln Tyr Gly Val Ala Ser Pro Cys Arg Thr Ile Cys Thr Val
 115 120 125
 Cys Gly Phe Val Ala Leu Ser Phe Leu Leu Ile His Tyr Xaa Tyr Phe
 130 135 140
 Val Pro Pro Glu Phe Phe Val Lys Leu Gly Gln Asn Thr
 145 150 155

<210> 2823
<211> 526
<212> DNA
<213> *Neisseria meningitidis*

<400> 2823
atgaagcggc aggcctttctt caaactgatg gcgtgtgcgg catttctgtc tgccgtttcg 60
ctgcgcctcc ccgtattggg cgcgtgttac gcaatattgt cctctatgc gtttgactt 120
tacggcatcg acaaacggcg tgccgtgcgg ggaaaacgcc gcattccga acaccgcctg 180
ctgctgcctg ccttgttcgg cggttgggcg ggcgcatact tgggcagcag gatattcagg 240
cataaaacgg cgaaaaagcg ttttgttgtg ctgttccgtc tgactgtttc gggcaatgtc 300
ctggcgaccc tcatcctgat ttatagtgga ttaaatttaa accagtacgg cgttgccctg 360
ccttagctca aagagaacga ttctctaagg tgctgaagca ccaagtgaat cggttccgta 420
ctatttgtag tgtctgcggc ttcgtcgccct tgcctgatt tttgttaatc cactatatta 480
ttttgtcccg cctgaatttt tcgtaaaact cgggcagaat acctga 526

<210> 2824
<211> 174
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 2824
Met Lys Arg Gln Ala Phe Phe Lys Leu Met Ala Cys Ala Ala Phe Leu
1 5 10 15
Ser Ala Val Ser Leu Arg Leu Pro Val Leu Gly Ala Cys Tyr Ala Ile
20 25 30
Leu Ser Leu Tyr Ala Phe Ala Leu Tyr Gly Ile Asp Lys Arg Arg Ala
35 40 45
Val Arg Gly Lys Arg Arg Ile Pro Glu His Arg Leu Leu Leu Pro Ala
50 55 60
Leu Phe Gly Gly Trp Ala Gly Ala Tyr Leu Gly Ser Arg Ile Phe Arg
65 70 75 80
His Lys Thr Ala Lys Lys Arg Phe Val Val Leu Phe Arg Leu Thr Val
85 90 95
Ser Gly Asn Val Leu Ala Thr Leu Ile Leu Ile Tyr Ser Gly Leu Asn
100 105 110
Leu Asn Gln Tyr Gly Val Ala Ser Pro Xaa Ala Gln Arg Glu Arg Phe
115 120 125
Ser Lys Val Leu Lys His Gln Val Asn Arg Phe Arg Thr Ile Cys Thr
130 135 140
Val Cys Gly Phe Val Ala Leu Ser Phe Leu Leu Ile His Tyr Xaa Tyr
145 150 155 160
Phe Val Pro Pro Glu Phe Phe Val Lys Leu Gly Gln Asn Thr
165 170

<210> 2825
 <211> 516
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 2825
 atgaaacaaa tgcttttggc cgtcggcgtg ggcgcggtgt tggcgggctg cggcaaggat 60
 gccggcgggtt acgaggggta ttggcgcgaa aagtcggaca aaaaagaggg cgtgattgcc 120
 gtcaaaaaaa aaggcaatta cttccttaat aaaatcaacg tgtttacagg caaggaggag 180
 tctttgcttt tgtctgaaaa agacggcgcg ctttcgataa acacggggat aggggaaatc 240
 ccgatcaaac tttccgacga cgggaaagag ctgtatgtcg aacgcaggcg gtatgtgaaa 300
 accgatgcgg cgatgaagga caaaatcatc gcccaccaga aaaagtgcgg acaaacggca 360
 caggcatacc tcgacgcgcg aaatgcgttg ccgtcaaac aaacgtatca gcagcgtcag 420
 gcggcgatcg agcaattgaa acggcgggtt gaagccgagt ttgacgaatt ggaaaaagaa 480
 atcaaatgca acggcaaacc gacattgttg ttttag 516

<210> 2826
 <211> 171
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 2826
 Met Lys Gln Met Leu Leu Ala Val Gly Val Gly Ala Val Leu Ala Gly
 1 5 10 15
 Cys Gly Lys Asp Ala Gly Gly Tyr Glu Gly Tyr Trp Arg Glu Lys Ser
 20 25 30
 Asp Lys Lys Glu Gly Val Ile Ala Val Lys Lys Lys Gly Asn Tyr Phe
 35 40 45
 Leu Asn Lys Ile Asn Val Phe Thr Gly Lys Glu Glu Ser Leu Leu Leu
 50 55 60
 Ser Glu Lys Asp Gly Ala Leu Ser Ile Asn Thr Gly Ile Gly Glu Ile
 65 70 75 80
 Pro Ile Lys Leu Ser Asp Asp Gly Lys Glu Leu Tyr Val Glu Arg Arg
 85 90 95
 Arg Tyr Val Lys Thr Asp Ala Ala Met Lys Asp Lys Ile Ile Ala His
 100 105 110
 Gln Lys Lys Cys Gly Gln Thr Ala Gln Ala Tyr Leu Asp Ala Arg Asn
 115 120 125
 Ala Leu Pro Ser Asn Gln Thr Tyr Gln Gln Arg Gln Ala Ala Ile Glu
 130 135 140
 Gln Leu Lys Arg Arg Phe Glu Ala Glu Phe Asp Glu Leu Glu Lys Glu
 145 150 155 160
 Ile Lys Cys Asn Gly Lys Pro Thr Leu Leu Phe
 165 170

<210> 2827
<211> 150
<212> DNA
<213> *Neisseria meningitidis*

<400> 2827
atgaaacaaa tgcttttagc cgtcggcggtg gtggcggtgt tggcgggctg cggcaaggat 60
gccggcggtt acgaggggta ttggcgcgaa aagtcggaca aaaaagaggg tatgattgcc 120
gtcaaaaaag aaaaaggcaa ttacttcctt 150

<210> 2828
<211> 50
<212> PRT
<213> *Neisseria meningitidis*

<400> 2828
Met Lys Gln Met Leu Leu Ala Val Gly Val Val Ala Val Leu Ala Gly
1 5 10 15
Cys Gly Lys Asp Ala Gly Gly Tyr Glu Gly Tyr Trp Arg Glu Lys Ser
20 25 30
Asp Lys Lys Glu Gly Met Ile Ala Val Lys Lys Glu Lys Gly Asn Tyr
35 40 45
Phe Leu
50

<210> 2829
<211> 516
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 2829
atgaaacaaa tgcttttggc cgtcggcggtg gcggcggtgt tggcgggctg cggcaaggat 60
gccggcggtt acgaggggta ttggcgcgaa aagtcggaca aaaaagaggg cgtgattgcc 120
gtcaaaaaaa aaggcaatta cttccttaat aaaatcaacg tgtttacagg caaggaggag 180
tctttgcttt tgtctgaaaa agacggcgcg ctttcgataa acacggggat aggggaaatc 240
ccgatcaaac tttccgacga cgggaaagag ctgtatgtcg aacgcaggcg gtatgtgaaa 300
accgatgcgg cgatgaagga caaaatcatc gcccaccaga aaaagtgcgg acaaacggca 360
caggcatacc tcgacgcgcg aaatgcgttg ccgtcaaacc aaacgtatca gcagcgtcag 420
gcggcgatcg agcaattgaa acggcggttt gaagccgagt ttgacgaatt ggaaaaagaa 480
atcaaatgca acggcaaacc gacattgttg ttttag 516

<210> 2830
<211> 171
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 2830
Met Lys Gln Met Leu Leu Ala Val Gly Val Ala Ala Val Leu Ala Gly
1 5 10 15

Cys Gly Lys Asp Ala Gly Gly Tyr Glu Gly Tyr Trp Arg Glu Lys Ser
 20 25 30
 Asp Lys Lys Glu Gly Val Ile Ala Val Lys Lys Lys Gly Asn Tyr Phe
 35 40 45
 Leu Asn Lys Ile Asn Val Phe Thr Gly Lys Glu Glu Ser Leu Leu Leu
 50 55 60
 Ser Glu Lys Asp Gly Ala Leu Ser Ile Asn Thr Gly Ile Gly Glu Ile
 65 70 75 80
 Pro Ile Lys Leu Ser Asp Asp Gly Lys Glu Leu Tyr Val Glu Arg Arg
 85 90 95
 Arg Tyr Val Lys Thr Asp Ala Ala Met Lys Asp Lys Ile Ile Ala His
 100 105 110
 Gln Lys Lys Cys Gly Gln Thr Ala Gln Ala Tyr Leu Asp Ala Arg Asn
 115 120 125
 Ala Leu Pro Ser Asn Gln Thr Tyr Gln Gln Arg Gln Ala Ala Ile Glu
 130 135 140
 Gln Leu Lys Arg Arg Phe Glu Ala Glu Phe Asp Glu Leu Glu Lys Glu
 145 150 155 160
 Ile Lys Cys Asn Gly Lys Pro Thr Leu Leu Phe
 165 170

<210> 2831
 <211> 522
 <212> DNA
 <213> Neisseria meningitidis

<400> 2831
 atgaaacaaa tgcttttagc cgctcgccgtg gtggcggtgt tggcgggctg cggcaaggat 60
 gccggcggtt acgaggggta ttggcgcgaa aagtcggaca aaaaagaggg tatgattgcc 120
 gtcaaaaaag aaaaaggcaa ttacttcctt aataaaatcc acgtggttac aggcaaggaa 180

 gagtccttgc ttttgtctga aaaagacggc gcgctttcga taaacacagg gataggggaa 240
 atcccgatca aactttccga cgacgggaaa gagctgtatg tcgaacgtag gcagtatgtc 300
 aaaaccgatg cggcgatgaa ggacaaaatc atcgcccatc agaaaaagtg cggacaaaca 360
 gcacaggcat accgcgacgc gcgaaatgcg ttgccgtcaa accagacgta tcagcagcat 420
 ctggcggcga tcgagcaatt gaaacggcgg ttggaagccg agtttgacga attggaaaaa 480
 gaaatcaaat gcaacggcag aagcccggca ttgttgcttt ag 522

<210> 2832
 <211> 173
 <212> PRT
 <213> Neisseria meningitidis

<400> 2832

Met Lys Gln Met Leu Leu Ala Val Gly Val Val Ala Val Leu Ala Gly
1 5 10 15

Cys Gly Lys Asp Ala Gly Gly Tyr Glu Gly Tyr Trp Arg Glu Lys Ser
20 25 30

Asp Lys Lys Glu Gly Met Ile Ala Val Lys Lys Glu Lys Gly Asn Tyr
35 40 45

Phe Leu Asn Lys Ile His Val Val Thr Gly Lys Glu Glu Ser Leu Leu
50 55 60

Leu Ser Glu Lys Asp Gly Ala Leu Ser Ile Asn Thr Gly Ile Gly Glu
65 70 75 80

Ile Pro Ile Lys Leu Ser Asp Asp Gly Lys Glu Leu Tyr Val Glu Arg
85 90 95

Arg Gln Tyr Val Lys Thr Asp Ala Ala Met Lys Asp Lys Ile Ile Ala
100 105 110

His Gln Lys Lys Cys Gly Gln Thr Ala Gln Ala Tyr Arg Asp Ala Arg
115 120 125

Asn Ala Leu Pro Ser Asn Gln Thr Tyr Gln Gln His Leu Ala Ala Ile
130 135 140

Glu Gln Leu Lys Arg Arg Phe Glu Ala Glu Phe Asp Glu Leu Glu Lys
145 150 155 160

Glu Ile Lys Cys Asn Gly Arg Ser Pro Ala Leu Leu Leu
165 170

<210> 2833
<211> 369
<212> DNA
<213> Neisseria meningitidis

<400> 2833
aataaaatca acgtgtttac aggtaaggaa gaatctatgc ttttgtctga aaaagacggc 60
gcgcttttcga taaacacggg gataggggaa atcccgatca aactttccga cgacgggaaa 120
gagctgtatg tcgaacgcag gcagtatgtc aaaaccgatg cggcgatgaa ggacaaaatc 180
atcgcccatc agaaaaagtg cggacaaaacg gcacaggcat atctcgacgc gcgaaatgcg 240
ttgccgtcaa accagacgta tcagcagcat caggcggcga tcgagcagtt gaaacggcgg 300
tttgaagccg agtttgacga attggaaaaa gaaatcaaat gcaacggcaa accgacattg 360
ttgttttag 369

<210> 2834
<211> 122
<212> PRT
<213> Neisseria meningitidis

<400> 2834
Asn Lys Ile Asn Val Phe Thr Gly Lys Glu Glu Ser Met Leu Leu Ser
1 5 10 15

Glu Lys Asp Gly Ala Leu Ser Ile Asn Thr Gly Ile Gly Glu Ile Pro
 20 25 30
 Ile Lys Leu Ser Asp Asp Gly Lys Glu Leu Tyr Val Glu Arg Arg Gln
 35 40 45
 Tyr Val Lys Thr Asp Ala Ala Met Lys Asp Lys Ile Ile Ala His Gln
 50 55 60
 Lys Lys Cys Gly Gln Thr Ala Gln Ala Tyr Leu Asp Ala Arg Asn Ala
 65 70 75 80
 Leu Pro Ser Asn Gln Thr Tyr Gln Gln His Gln Ala Ala Ile Glu Gln
 85 90 95
 Leu Lys Arg Arg Phe Glu Ala Glu Phe Asp Glu Leu Glu Lys Glu Ile
 100 105 110
 Lys Cys Asn Gly Lys Pro Thr Leu Leu Phe
 115 120

<210> 2835
 <211> 489
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2835
 atgaacacac ccgatatccgc atcggtcatc ctgcttttga cgcgttgccg gcaattacct 60
 caaaataacg aaaacctgtg gcagccgtcc gaacacatca gcagttttgc agcggaaggg 120
 cggttggcag tcaaagcgga agggaaaggt tcgtatgcaa atttcgattg gacataccaa 180
 ccgccgtgga aaaccatcaa tatcaacacc cctttgggca gtacgctcgg acagtttgtt 240
 caagacaggg acggcgcatc ggcagtggaac ggcaaaggaa atgtctatca ggcagagggg 300
 acggaagact tgagcaggca gctgggtcgg ttcaaaactgc caatccaata tctgcataatc 360
 tgggcggaag gcaggcgtgt ggcgggcgcg ccttaccgca tccggttcaga cggcatattg 420
 gaacaatacg gttggacaat cgggcagaac tgccgacagt ggggggcaag tccgaacggt 480
 gcaactgaa 489

<210> 2836
 <211> 163
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2836
 Met Lys His Thr Val Ser Ala Ser Val Ile Leu Leu Leu Thr Ala Cys
 1 5 10 15
 Ala Gln Leu Pro Gln Asn Asn Glu Asn Leu Trp Gln Pro Ser Glu His
 20 25 30
 Ile Ser Ser Phe Ala Ala Glu Gly Arg Leu Ala Val Lys Ala Glu Gly
 35 40 45
 Lys Gly Ser Tyr Ala Asn Phe Asp Trp Thr Tyr Gln Pro Pro Val Glu
 50 55 60

Thr Ile Asn Ile Asn Thr Pro Leu Gly Ser Thr Leu Gly Gln Leu Cys
 65 70 75 80
 Gln Asp Arg Asp Gly Ala Leu Ala Val Asp Gly Lys Gly Asn Val Tyr
 85 90 95
 Gln Ala Glu Gly Thr Glu Asp Leu Ser Arg Gln Leu Val Gly Phe Lys
 100 105 110
 Leu Pro Ile Gln Tyr Leu His Ile Trp Ala Glu Gly Arg Arg Val Ala
 115 120 125
 Gly Ala Pro Tyr Arg Ile Arg Ser Asp Gly Ile Leu Glu Gln Tyr Gly
 130 135 140
 Trp Thr Ile Gly Gln Asn Cys Arg Gln Trp Gly Ala Ser Pro Asn Val
 145 150 155 160

Ala Thr Glu

<210> 2837
 <211> 582
 <212> DNA
 <213> Neisseria meningitidis

<400> 2837
 atgaaacaca ccgtatccgc atcgggtcatc ctgcttttga ccgcttgccg gcaattacct 60
 caaaataacg aaaacctgtg gcagccgtcc gaacacatca gcagttttgc agcagaaggg 120
 cggttggcag tgaaagcgga agggaaaggt tcgtatgcaa atttcgattg gacataccaa 180
 ccgcccgtgg aaaccatcaa tatcaatacc cctttgggca gtacgctcgg gcagtttgt 240
 caagacaggg acggcgcatt ggcagtggac ggcaaaggaa atgtctatca ggcggaaagt 300
 gcggaagaat tgagcaggca gctggtcggt ttcaaactgc caatccaata tctgcataatc 360
 tgggcagatg gcaggcgtgt ggccggcgcg ccttaccgca tcctgccgga cggcatattg 420
 gaacaatacg gttggactgt cggcagaacc gccgacagtg gggggcaagt ccgaacgttg 480
 caactgaata acggaattt gaacatcagg ctggttttca ccgaaatcgg tatgccgtct 540
 gaaaccgaaa ccccggaacg ctgtgcggcg cgcacgagat aa 582

<210> 2838
 <211> 193
 <212> PRT
 <213> Neisseria meningitidis

<400> 2838
 Met Lys His Thr Val Ser Ala Ser Val Ile Leu Leu Leu Thr Ala Cys
 1 5 10 15
 Ala Gln Leu Pro Gln Asn Asn Glu Asn Leu Trp Gln Pro Ser Glu His
 20 25 30
 Ile Ser Ser Phe Ala Ala Glu Gly Arg Leu Ala Val Lys Ala Glu Gly
 35 40 45
 Lys Gly Ser Tyr Ala Asn Phe Asp Trp Thr Tyr Gln Pro Pro Val Glu

50	55	60
Thr Ile Asn Ile Asn Thr Pro Leu Gly Ser Thr Leu Gly Gln Leu Cys		
65	70	75 80
Gln Asp Arg Asp Gly Ala Leu Ala Val Asp Gly Lys Gly Asn Val Tyr		
	85 90	95
Gln Ala Glu Ser Ala Glu Glu Leu Ser Arg Gln Leu Val Gly Phe Lys		
	100 105	110
Leu Pro Ile Gln Tyr Leu His Ile Trp Ala Asp Gly Arg Arg Val Ala		
	115 120	125
Gly Ala Pro Tyr Arg Ile Leu Pro Asp Gly Ile Leu Glu Gln Tyr Gly		
	130 135	140
Trp Thr Val Gly Arg Thr Ala Asp Ser Gly Gly Gln Val Arg Thr Leu		
	145 150	155 160
Gln Leu Asn Asn Gly Asn Leu Asn Ile Arg Leu Val Phe Thr Glu Ile		
	165 170	175
Gly Met Pro Ser Glu Thr Glu Thr Pro Glu Arg Cys Ala Ala Arg Thr		
	180 185	190

Arg

<210> 2839
 <211> 724
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2839
 atgaaaacct acgcacaggc actctatacc gcagccctgc tcaccgcctg cagccccgca 60
 gccgattcaa accatccgtc cggacaaaat gcccgggcca ataccgaatc cgacggaaaa 120
 aacattaccc tgctcaatgc ctcgtagcat gtgacacggg atttttacaa agaatacgac 180
 cacttgtttg tcggaacata ccaatccgaa caccgccgca catccgtcag catccaacaa 240
 tcccacggcg gcttcagcaa acaggcatta tccgtagcca acggccttca agccgatgtc 300
 gtaacctga accaatcttc cgacatcgac ctgctcgaaa aaaaggactg gtagaaaaag 360
 gctggcaaca agccctcccc gatcacgccg caccctacac cagcactatg gttttccttg 420
 tccgaaaaaa caaccccaaa cagatccgcg attggaacga ccttgccaaa gacggcggtta 480
 acatcgatcat cgccaagacc tcgggcaacg gacgctacgc cttcctcggc gcatacgggt 540
 acggtctgaa agccaacaac ggcaacgagc aggaagccca aaaactcgtc gcatccatcc 600
 tcaaaaacac acccggtttt gaaaacggcg gacgcgcccg ccgccaccac cttcacacaa 660
 cgcaacatcg gcgacgtact catcactttt gaaaacgaag ccaactacgt cagcaaaaaa 720
 ctga 724

<210> 2840
 <211> 241
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2840

Met Lys Thr Tyr Ala Gln Ala Leu Tyr Thr Ala Ala Leu Leu Thr Ala
 1 5 10 15
 Cys Ser Pro Ala Ala Asp Ser Asn His Pro Ser Gly Gln Asn Ala Pro
 20 25 30
 Ala Asn Thr Glu Ser Asp Gly Lys Asn Ile Thr Leu Leu Asn Ala Ser
 35 40 45
 Tyr Asp Val Thr Arg Tyr Phe Tyr Lys Glu Tyr Asp His Leu Phe Val
 50 55 60
 Gly Thr Tyr Gln Ser Glu His Pro Gly Thr Ser Val Ser Ile Gln Gln
 65 70 75 80
 Ser His Gly Gly Phe Ser Lys Gln Ala Leu Ser Val Ala Asn Gly Leu
 85 90 95
 Gln Ala Asp Val Val Thr Met Asn Gln Ser Ser Asp Ile Asp Leu Leu
 100 105 110
 Glu Lys Xaa Gly Leu Val Glu Lys Gly Trp Gln Gln Ala Leu Pro Asp
 115 120 125
 His Ala Ala Pro Tyr Thr Ser Thr Met Val Phe Leu Val Arg Lys Asn
 130 135 140
 Asn Pro Lys Gln Ile Arg Asp Trp Asn Asp Leu Ala Lys Asp Gly Val
 145 150 155 160
 Asn Ile Val Ile Ala Lys Thr Ser Gly Asn Gly Arg Tyr Ala Phe Leu
 165 170 175
 Gly Ala Tyr Gly Tyr Gly Leu Lys Ala Asn Asn Gly Asn Glu Gln Glu
 180 185 190
 Ala Gln Lys Leu Val Ala Ser Ile Leu Lys Asn Thr Pro Val Phe Glu
 195 200 205
 Asn Gly Gly Arg Xaa Pro Pro Pro Pro Ser His Asn Ala Thr Ser
 210 215 220
 Ala Thr Tyr Ser Ser Leu Leu Lys Thr Lys Pro Thr Thr Ser Ala Lys
 225 230 235 240
 Asn

<210> 2841

<211> 729

<212> DNA

<213> Neisseria meningitidis

<400> 2841

atgaaaacct acgaccggc actctatacc gcagccctgc tcaccgctg cagcccgca 60


```

gccgattcaa accatccgtc cggacaaaat gccccggcca ataccgaatc cgacggaaaa 120
aacattaccc tgctcaacgc ctcatatgat gtggcacggg atttttacaa agaatacaac 180
cccttattta tcaaaacata ccaatccgaa cccccggca catccgtcag catccaacag 240
tcccacggcg gctccagcaa acaggcatta tccgtagcca acggccttca agccgatgtc 300
gtaaccatga accaatcctc cgacatcgac ctgctcgaaa aaaaaggact ggtagaaaaa 360
ggctggcaac aagccctccc cgaccacgcc gcgccctaca ccagcactat ggttttcctt 420
gtccgaaaaa acaaccccaa acagatccgc gattggaacg accttgccaa agacggcggt 480
aacatcgtca tcgccaatcc caaaacctcg ggcaacggac gctacgcctt cctcggcgca 540
tacggttacg gtctgaaaac caccaacggc aacgaacagg aagcccaaaa actcgtcgca 600
tccatcctca aaaacacccc cgtttttgaa aacggcggac gckcgccacc accaccttca 660
cacaacgcaa catcggcgac gtactcatca cttttgaaaa cgaagccaac tacgtcagcr 720
aaaaactga                                     729

```

<210> 2842

<211> 242

<212> PRT

<213> Neisseria meningitidis

<400> 2842

```

Met Lys Thr Tyr Ala Pro Ala Leu Tyr Thr Ala Ala Leu Leu Thr Ala
  1              5              10              15

```

```

Cys Ser Pro Ala Ala Asp Ser Asn His Pro Ser Gly Gln Asn Ala Pro
              20              25              30

```

```

Ala Asn Thr Glu Ser Asp Gly Lys Asn Ile Thr Leu Leu Asn Ala Ser
      35              40              45

```

```

Tyr Asp Val Ala Arg Asp Phe Tyr Lys Glu Tyr Asn Pro Leu Phe Ile
      50              55              60

```

```

Lys Thr Tyr Gln Ser Glu His Pro Gly Thr Ser Val Ser Ile Gln Gln
      65              70              75              80

```

```

Ser His Gly Gly Ser Ser Lys Gln Ala Leu Ser Val Ala Asn Gly Leu
              85              90              95

```

```

Gln Ala Asp Val Val Thr Met Asn Gln Ser Ser Asp Ile Asp Leu Leu
      100              105              110

```

```

Glu Lys Lys Gly Leu Val Glu Lys Gly Trp Gln Gln Ala Leu Pro Asp
      115              120              125

```

```

His Ala Ala Pro Tyr Thr Ser Thr Met Val Phe Leu Val Arg Lys Asn
      130              135              140

```

```

Asn Pro Lys Gln Ile Arg Asp Trp Asn Asp Leu Ala Lys Asp Gly Val
      145              150              155              160

```

```

Asn Ile Val Ile Ala Asn Pro Lys Thr Ser Gly Asn Gly Arg Tyr Ala
              165              170              175

```

```

Phe Leu Gly Ala Tyr Gly Tyr Gly Leu Lys Thr Thr Asn Gly Asn Glu
      180              185              190

```

```

Gln Glu Ala Gln Lys Leu Val Ala Ser Ile Leu Lys Asn Thr Pro Val

```

195 200 205
 Phe Glu Asn Gly Gly Arg Xaa Pro Pro Pro Pro Ser His Asn Ala Thr
 210 215 220
 Ser Ala Thr Tyr Ser Ser Leu Leu Lys Thr Lys Pro Thr Thr Ser Ala
 225 230 235 240
 Lys Asn

<210> 2843
 <211> 729
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2843
 atgaaaacct acgcaccggc actctatacc gcagccctgc tcagcgccctg cagccccgca 60
 gccgattcaa accatccgtc cggacaaaat gccccggcca ataccgaatc cgacggaaaa 120
 aacattaccc tgctcaacgc ctcatacgat gtggcacggg atttttacaa agaatacaac 180
 cccttattta tcaaaacata ccaatccgaa caccocggca catccgtcag cateccaacag 240
 tcccacggcg gctccagcaa acaggcatta tccgtagcca acggccttca agccgatgtc 300
 gtaaccatga accaatcctc cgacatcgac ctgctcgaaa aaaaaggact ggtagaaaaa 360
 ggctggcaac aagccctccc cgaccacgcc gcgccctaca ccagcactat ggttttcctt 420
 gtccgaaaaa acaaccccaa acagatccgc gattggaacg accttgccaa agacggcggt 480
 aacatcgta tcgccaatcc caaaacctcg ggcaacggac gctacgcctt cctcggcgca 540
 tacggttacg gtctgaaaaa caccaacggc aacgaacagg aagcccaaaa actcgtcgca 600
 tccatcctca aaaacacccc cgtttttgaa aacggcggac gcgcgccacc accaccttca 660
 cacaacgcaa catcggcgac gtactcatca cttttgaaaa cgaagccaac tacgtcagca 720
 aaaaactga 729

<210> 2844
 <211> 242
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2844
 Met Lys Thr Tyr Ala Pro Ala Leu Tyr Thr Ala Ala Leu Leu Ser Ala
 1 5 10 15
 Cys Ser Pro Ala Ala Asp Ser Asn His Pro Ser Gly Gln Asn Ala Pro
 20 25 30
 Ala Asn Thr Glu Ser Asp Gly Lys Asn Ile Thr Leu Leu Asn Ala Ser
 35 40 45
 Tyr Asp Val Ala Arg Asp Phe Tyr Lys Glu Tyr Asn Pro Leu Phe Ile
 50 55 60
 Lys Thr Tyr Gln Ser Glu His Pro Gly Thr Ser Val Ser Ile Gln Gln
 65 70 75 80
 Ser His Gly Gly Ser Ser Lys Gln Ala Leu Ser Val Ala Asn Gly Leu
 85 90 95

Gln Ala Asp Val Val Thr Met Asn Gln Ser Ser Asp Ile Asp Leu Leu
100 105 110

Glu Lys Lys Gly Leu Val Glu Lys Gly Trp Gln Gln Ala Leu Pro Asp
115 120 125

His Ala Ala Pro Tyr Thr Ser Thr Met Val Phe Leu Val Arg Lys Asn
130 135 140

Asn Pro Lys Gln Ile Arg Asp Trp Asn Asp Leu Ala Lys Asp Gly Val
145 150 155 160

Asn Ile Val Ile Ala Asn Pro Lys Thr Ser Gly Asn Gly Arg Tyr Ala
165 170 175

Phe Leu Gly Ala Tyr Gly Tyr Gly Leu Lys Thr Thr Asn Gly Asn Glu
180 185 190

Gln Glu Ala Gln Lys Leu Val Ala Ser Ile Leu Lys Asn Thr Pro Val
195 200 205

Phe Glu Asn Gly Gly Arg Ala Pro Pro Pro Pro Ser His Asn Ala Thr
210 215 220

Ser Ala Thr Tyr Ser Ser Leu Leu Lys Thr Lys Pro Thr Thr Ser Ala
225 230 235 240

Lys Asn

<210> 2845

<211> 1464

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2845

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ttggcactgc ccgtaccoga cgggggtcaag cctcaggctt ggacgctgct ggctatgttt 120
gtcgggtgtga ttgcccgcct tctcggaag gttatgccgt tgggcgcgct gtcgattatt 180
gccgtcgggt tggtcgcagt aaccggcgta accgccgaca aaccgggcgc ggcgatgagc 240
gatgcgttga gtgcgttcgc caatccgttg atttggctga ttgccatcgc agttatgatt 300
tcgcgcgggt tgcataaaac agggctgggg atgcgtatcg gatatttgtt tatcgccgtt 360
tttggaaaga aaacgctggg catcgggttac agtctcgtc tttccgaact gctgctggct 420
cccgttacc cttccaatac cgcgcgcggc ggcggcatta tacatccgat tatgcagtcg 480
attgccggca gttacggctc caatcccga aaaggcacag aaggcaagat gggtaaata 540
ttggcttttg tcaattatca ttccaatccc atttcgtcgg ctatggctat tactgcaact 600
gcccccaacc ctttaatcgt caacttgatt gccgaaaatt taggcagtag tttccgtctt 660
tcttgggggg cgtgggcgtg ggcaatggct gttcccggcg ttatcgcctt tttcgttatg 720
cctttgattt tatatttttt gtatccgcct gaaattaaag aaacgccc aa tgctgttcaa 780
tttgccaaag accgtctgag cgagatgggt aaaatgtcgg cagacgaaat cattatggcg 840
gtcattttcg gtatctgtct gctgttctgg gcagatgttc ccgcccttat taccggcaat 900
cacgctttta gtatcaacgc caccgccacc gcattttatcg gattaagcct gcttttgctt 960
tccggtgtat tgacttggga cgatgttttg aaagaaaaaa gcgcgtggga tacgattatt 1020
tggtttggcg cattgattat gatggccgca tttttaaata aactcggact gattaaatgg 1080
ttctccggag tggtggcgga aagtgtcggc ggtttggggc tttagcggcac ggctgcgggc 1140

gtaatcctcg tgcttgctta tatgtatgcg cattatatgt ttgccagtac tactgcacat 1200
 attaccgcta tgttcggcgc atttctcgct gctgccgttt cactgaatgc cccggcgatg 1260
 ccgactgcgc tgatgatggc ggccgcatcc aacattatga tgaccctcac tcattatgcg 1320
 accggtactt cacctgtgat ttccggctcg ggctacacca caatgggaga atggtggaag 1380
 gcgggtttta tcatgagcgt agtcaatttt ctgatttttt ccgttatcgg cagcatttgg 1440
 tggaaagttc tgggatattg gtaa 1464

<210> 2846

<211> 487

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 2846

Met Lys Leu Gly Phe Lys Pro Ile Pro Leu Ala Ile Ala Ala Val Leu
 1 5 10 15

Cys Ala Leu Val Leu Ala Leu Pro Val Pro Asp Gly Val Lys Pro Gln
 20 25 30

Ala Trp Thr Leu Leu Ala Met Phe Val Gly Val Ile Ala Ala Ile Ile
 35 40 45

Gly Lys Val Met Pro Leu Gly Ala Leu Ser Ile Ile Ala Val Gly Leu
 50 55 60

Val Ala Val Thr Gly Val Thr Ala Asp Lys Pro Gly Ala Ala Met Ser
 65 70 75 80

Asp Ala Leu Ser Ala Phe Ala Asn Pro Leu Ile Trp Leu Ile Ala Ile
 85 90 95

Ala Val Met Ile Ser Arg Gly Leu Leu Lys Thr Gly Leu Gly Met Arg
 100 105 110

Ile Gly Tyr Leu Phe Ile Ala Val Phe Gly Arg Lys Thr Leu Gly Ile
 115 120 125

Gly Tyr Ser Leu Ala Leu Ser Glu Leu Leu Leu Ala Pro Val Thr Pro
 130 135 140

Ser Asn Thr Ala Arg Gly Gly Gly Ile Ile His Pro Ile Met Gln Ser
 145 150 155 160

Ile Ala Gly Ser Tyr Gly Ser Asn Pro Ala Lys Gly Thr Glu Gly Lys
 165 170 175

Met Gly Lys Tyr Leu Ala Leu Val Asn Tyr His Ser Asn Pro Ile Ser
 180 185 190

Ser Ala Met Ala Ile Thr Ala Thr Ala Pro Asn Pro Leu Ile Val Asn
 195 200 205

Leu Ile Ala Glu Asn Leu Gly Ser Ser Phe Arg Leu Ser Trp Gly Ala
 210 215 220

Trp Ala Trp Ala Met Ala Val Pro Gly Val Ile Ala Phe Phe Val Met

225		230		235		240									
Pro	Leu	Ile	Leu	Tyr	Phe	Leu	Tyr	Pro	Pro	Glu	Ile	Lys	Glu	Thr	Pro
				245					250					255	
Asn	Ala	Val	Gln	Phe	Ala	Lys	Asp	Arg	Leu	Ser	Glu	Met	Gly	Lys	Met
			260					265					270		
Ser	Ala	Asp	Glu	Ile	Ile	Met	Ala	Val	Ile	Phe	Gly	Ile	Leu	Leu	Leu
		275					280					285			
Leu	Trp	Ala	Asp	Val	Pro	Ala	Leu	Ile	Thr	Gly	Asn	His	Ala	Phe	Ser
	290					295					300				
Ile	Asn	Ala	Thr	Ala	Thr	Ala	Phe	Ile	Gly	Leu	Ser	Leu	Leu	Leu	Leu
305					310					315					320
Ser	Gly	Val	Leu	Thr	Trp	Asp	Asp	Val	Leu	Lys	Glu	Lys	Ser	Ala	Trp
			325						330					335	
Asp	Thr	Ile	Ile	Trp	Phe	Gly	Ala	Leu	Ile	Met	Met	Ala	Ala	Phe	Leu
			340					345						350	
Asn	Lys	Leu	Gly	Leu	Ile	Lys	Trp	Phe	Ser	Gly	Val	Leu	Ala	Glu	Ser
		355					360					365			
Val	Gly	Gly	Leu	Gly	Val	Ser	Gly	Thr	Ala	Ala	Gly	Val	Ile	Leu	Val
	370					375					380				
Leu	Ala	Tyr	Met	Tyr	Ala	His	Tyr	Met	Phe	Ala	Ser	Thr	Thr	Ala	His
385					390					395					400
Ile	Thr	Ala	Met	Phe	Gly	Ala	Phe	Leu	Ala	Ala	Ala	Val	Ser	Leu	Asn
			405						410					415	
Ala	Pro	Ala	Met	Pro	Thr	Ala	Leu	Met	Met	Ala	Ala	Ala	Ser	Asn	Ile
			420					425					430		
Met	Met	Thr	Leu	Thr	His	Tyr	Ala	Thr	Gly	Thr	Ser	Pro	Val	Ile	Phe
		435					440					445			
Gly	Ser	Gly	Tyr	Thr	Thr	Met	Gly	Glu	Trp	Trp	Lys	Ala	Gly	Phe	Ile
	450					455					460				
Met	Ser	Val	Val	Asn	Phe	Leu	Ile	Phe	Ser	Val	Ile	Gly	Ser	Ile	Trp
465					470					475					480
Trp	Lys	Val	Leu	Gly	Tyr	Trp									
			485												

<210> 2847

<211> 1464

<212> DNA

<213> Neisseria meningitidis

<400> 2847

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gtcgggtgtga ttgccgccat tatcggcaag gccatgccgt tgggcgcgct gtcgattatt 180
gccgtcgggt tggtcgcagt aaccggcgta accgccgaca aaccgggcgc ggcgatgagc 240
gatgcgttga gtgcgttcgc caatccgttg atttggctga ttgccatcgc agttatgatt 300
tcgcgcggtt tgctcaaaac agggctgggg atgcgtatcg gatatttgtt tatcgccgtt 360
tttggaaaga aaacgctggg catcggttac agtctcgtc tttccgaact gctgctggct 420
cccgttacct cttccaatac cgcgcgcggc ggcggcatta tacatccgat tatgcagtcg 480
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gcccccaacc ctttaatcgt caacttgatt gccgaaaatt taggcagtag tttccgtctt 660
tcttgggggg cgtgggcgtg ggcaatggct gttcccggcg ttatcgctt tttcgttatg 720
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```

<210> 2848

<211> 487

<212> PRT

<213> *Neisseria meningitidis*

<400> 2848

```

Met Lys Leu Gly Phe Lys Pro Ile Pro Leu Ala Ile Ala Ala Val Leu
  1                      5                      10                      15

```

```

Cys Ala Leu Val Leu Ala Leu Pro Val Pro Asp Gly Val Lys Pro Gln
          20                      25                      30

```

```

Ala Trp Thr Leu Leu Ala Met Phe Val Gly Val Ile Ala Ala Ile Ile
          35                      40                      45

```

```

Gly Lys Ala Met Pro Leu Gly Ala Leu Ser Ile Ile Ala Val Gly Leu
          50                      55                      60

```

```

Val Ala Val Thr Gly Val Thr Ala Asp Lys Pro Gly Ala Ala Met Ser
          65                      70                      75                      80

```

```

Asp Ala Leu Ser Ala Phe Ala Asn Pro Leu Ile Trp Leu Ile Ala Ile
          85                      90                      95

```

```

Ala Val Met Ile Ser Arg Gly Leu Leu Lys Thr Gly Leu Gly Met Arg
          100                     105                     110

```

```

Ile Gly Tyr Leu Phe Ile Ala Val Phe Gly Arg Lys Thr Leu Gly Ile
          115                     120                     125

```

Gly	Tyr	Ser	Leu	Ala	Leu	Ser	Glu	Leu	Leu	Leu	Ala	Pro	Val	Thr	Pro		
130						135					140						
Ser	Asn	Thr	Ala	Arg	Gly	Gly	Gly	Ile	Ile	His	Pro	Ile	Met	Gln	Ser		
145					150					155					160		
Ile	Ala	Gly	Ser	Tyr	Gly	Ser	Asn	Pro	Ala	Lys	Gly	Thr	Glu	Gly	Lys		
				165					170					175			
Met	Gly	Lys	Tyr	Leu	Ala	Leu	Val	Asn	Tyr	His	Ser	Asn	Pro	Ile	Ser		
			180					185					190				
Ser	Ala	Met	Phe	Ile	Thr	Ala	Thr	Ala	Pro	Asn	Pro	Leu	Ile	Val	Asn		
		195					200					205					
Leu	Ile	Ala	Glu	Asn	Leu	Gly	Ser	Ser	Phe	Arg	Leu	Ser	Trp	Gly	Ala		
	210					215					220						
Trp	Ala	Trp	Ala	Met	Ala	Val	Pro	Gly	Val	Ile	Ala	Phe	Phe	Val	Met		
225					230					235					240		
Pro	Leu	Ile	Leu	Tyr	Xaa	Leu	Tyr	Pro	Pro	Glu	Ile	Lys	Glu	Thr	Pro		
				245					250					255			
Asn	Ala	Val	Gln	Phe	Ala	Lys	Asp	Arg	Leu	Arg	Glu	Met	Gly	Lys	Met		
			260					265					270				
Ser	Ala	Asp	Glu	Ile	Ile	Met	Ala	Val	Ile	Phe	Gly	Ile	Leu	Leu	Leu		
		275					280					285					
Leu	Trp	Ala	Asp	Val	Pro	Ala	Leu	Ile	Thr	Gly	Asn	His	Ala	Phe	Ser		
	290					295					300						
Ile	Asn	Ala	Thr	Ala	Thr	Ala	Phe	Ile	Gly	Leu	Ser	Leu	Leu	Leu	Leu		
305					310					315					320		
Ser	Gly	Val	Leu	Thr	Trp	Asp	Asp	Val	Leu	Lys	Glu	Lys	Ser	Ala	Trp		
				325					330					335			
Asp	Thr	Ile	Ile	Trp	Phe	Gly	Ala	Leu	Ile	Met	Met	Ala	Ala	Phe	Leu		
			340					345					350				
Asn	Lys	Leu	Gly	Leu	Ile	Lys	Trp	Phe	Ser	Gly	Val	Leu	Ala	Glu	Ser		
		355					360					365					
Val	Gly	Gly	Leu	Gly	Val	Ser	Gly	Thr	Ala	Ala	Gly	Val	Ile	Leu	Val		
	370					375					380						
Leu	Ala	Tyr	Met	Tyr	Ala	His	Tyr	Met	Phe	Ala	Ser	Thr	Thr	Ala	His		
385					390					395					400		
Ile	Thr	Ala	Met	Phe	Gly	Ala	Phe	Phe	Ala	Ala	Ala	Val	Ser	Leu	Asn		
				405					410					415			
Ala	Pro	Ala	Met	Pro	Thr	Ala	Leu	Met	Met	Ala	Ala	Ala	Ser	Asn	Ile		
			420					425					430				

Met Met Thr Leu Thr His Tyr Ala Thr Gly Thr Ser Pro Val Ile Phe
 435 440 445

Gly Ser Gly Tyr Thr Thr Met Gly Glu Trp Trp Lys Ala Gly Phe Ile
 450 455 460

Met Ser Val Val Asn Phe Leu Ile Phe Phe Val Ile Gly Ser Ile Trp
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Trp Lys Val Leu Gly Tyr Trp
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<210> 2849

<211> 1464

<212> DNA

<213> Neisseria meningitidis

<400> 2849

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<210> 2850

<211> 487

<212> PRT

<213> Neisseria meningitidis

<400> 2850

Met Lys Leu Gly Phe Lys Pro Ile Pro Leu Ala Ile Ala Ala Val Leu
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Cys Ala Leu Val Leu Ala Leu Pro Val Pro Asp Gly Val Lys Pro Gln

20	25	30
Ala Trp Thr Leu Leu Ala Met Phe Ile Gly Val Ile Ala Ala Ile Ile		
35	40	45
Gly Lys Ala Met Pro Leu Gly Ala Leu Ser Ile Ile Ala Val Gly Leu		
50	55	60
Val Ala Val Thr Gly Val Thr Ala Asp Lys Pro Gly Ala Ala Met Ser		
65	70	75
Asp Ala Leu Ser Ala Phe Ala Asn Pro Leu Ile Trp Leu Ile Ala Ile		
85	90	95
Ala Val Met Ile Ser Arg Gly Leu Leu Lys Thr Gly Leu Gly Met Arg		
100	105	110
Ile Gly Tyr Leu Phe Ile Ala Val Phe Gly Arg Lys Thr Leu Gly Ile		
115	120	125
Gly Tyr Ser Leu Ala Leu Ser Glu Leu Leu Leu Ala Pro Val Thr Pro		
130	135	140
Ser Asn Thr Ala Arg Gly Gly Gly Ile Ile His Pro Ile Met Gln Ser		
145	150	155
Ile Ala Gly Ser Tyr Gly Ser Asn Pro Ala Lys Gly Thr Glu Gly Lys		
165	170	175
Met Gly Lys Tyr Leu Ala Leu Val Asn Tyr His Ser Asn Pro Ile Ser		
180	185	190
Ser Ala Met Phe Ile Thr Ala Thr Ala Pro Asn Pro Leu Ile Val Asn		
195	200	205
Leu Ile Ala Glu Asn Leu Gly Ser Ser Phe Arg Leu Ser Trp Gly Ala		
210	215	220
Trp Ala Trp Ala Met Ala Val Pro Gly Val Ile Ala Phe Phe Val Met		
225	230	235
Pro Leu Ile Leu Tyr Phe Leu Tyr Pro Pro Glu Ile Lys Glu Thr Pro		
245	250	255
Asn Ala Val Gln Phe Ala Lys Asp Arg Leu Arg Glu Met Gly Lys Met		
260	265	270
Ser Ala Asp Glu Ile Ile Met Ala Val Ile Phe Gly Ile Leu Leu Leu		
275	280	285
Leu Trp Ala Asp Val Pro Ala Leu Ile Thr Gly Asn His Ala Phe Ser		
290	295	300
Ile Asn Ala Thr Ala Thr Ala Phe Ile Gly Leu Ser Leu Leu Leu Leu		
305	310	315
		320

Ser Gly Val Leu Thr Trp Asp Asp Val Leu Lys Glu Lys Ser Ala Trp
 325 330 335
 Asp Thr Ile Ile Trp Phe Gly Ala Leu Ile Met Met Ala Ala Phe Leu
 340 345 350
 Asn Lys Leu Gly Leu Ile Lys Trp Phe Ser Gly Val Leu Ala Glu Ser
 355 360 365
 Val Gly Gly Leu Gly Val Ser Gly Thr Ala Ala Gly Val Ile Leu Val
 370 375 380
 Leu Ala Tyr Met Tyr Ala His Tyr Met Phe Ala Ser Thr Thr Ala His
 385 390 395 400
 Ile Thr Ala Met Phe Gly Ala Phe Phe Ala Ala Ala Val Ser Leu Asn
 405 410 415
 Ala Pro Ala Met Pro Thr Ala Leu Met Met Ala Ala Ala Ser Asn Ile
 420 425 430
 Met Met Thr Leu Thr His Tyr Ala Thr Gly Thr Ser Pro Val Ile Phe
 435 440 445
 Gly Ser Gly Tyr Thr Thr Met Gly Glu Trp Trp Lys Ala Gly Phe Ile
 450 455 460
 Met Ser Val Val Asn Phe Leu Ile Phe Phe Val Ile Gly Ser Ile Trp
 465 470 475 480
 Trp Lys Val Leu Gly Tyr Trp
 485

<210> 2851
 <211> 483
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2851
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 cagcaagata ttcagcaacg ccaacgcgaa gagcagttgc gccaaaccat gcagcctgaa 180
 agcgatgtgc gtttgcatac aaaaaacacg ggggaaacg ttaatcagtt gatgggcgat 240
 gacagcagcc aaccgtgttt tgccattaac gaatgggtgt tggaaggcga acaccatgct 300
 cggtttcagt ttgcctaaa acgtgccttg cgcgaaacg gtttccaggc tggcaagtgt 360
 ctgcatgcgg gcaacattaa tcaaatcatg tccttagcac aaaatgcttt gatcggcagg 420
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 taa 483

<210> 2852
 <211> 160
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2852

Met	Lys	Leu	Pro	Leu	Ser	Tyr	Leu	Pro	Asn	Ile	Arg	Phe	Leu	Ser	Trp
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Cys	Cys	Leu	Leu	Ala	Gly	Ile	Ile	Ala	Pro	Ala	Thr	Leu	Leu	Ala	Ser
		20						25					30		
Pro	Asn	Pro	Ala	Glu	Ile	Arg	Met	Gln	Gln	Asp	Ile	Gln	Gln	Arg	Gln
		35					40					45			
Arg	Glu	Glu	Gln	Leu	Arg	Gln	Thr	Met	Gln	Pro	Glu	Ser	Asp	Val	Arg
	50					55					60				
Leu	His	Gln	Lys	Asn	Thr	Gly	Glu	Thr	Val	Asn	Gln	Leu	Met	Gly	Asp
65					70					75					80
Asp	Ser	Ser	Gln	Pro	Cys	Phe	Ala	Ile	Asn	Glu	Trp	Val	Leu	Glu	Gly
			85						90					95	
Glu	His	His	Ala	Arg	Phe	Gln	Phe	Ala	Leu	Lys	Arg	Ala	Leu	Arg	Glu
			100					105					110		
Thr	Gly	Phe	Gln	Ala	Gly	Lys	Cys	Leu	His	Ala	Gly	Asn	Ile	Asn	Gln
	115						120					125			
Ile	Met	Ser	Leu	Ala	Gln	Asn	Ala	Leu	Ile	Gly	Arg	Gly	Tyr	Thr	Thr
	130					135					140				
Thr	Arg	Ile	Leu	Ala	Ala	Pro	Gln	Asp	Leu	Asn	Ser	Gly	Ser	Phe	Asn
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<210> 2853

<211> 1437

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 2853

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<210> 2854

<211> 477

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 2854

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Gln Asn Ala Leu Ile Gly Arg Gly Tyr Thr Thr Thr Arg Ile Leu Ala
      20              25              30

Ala Pro Gln Asp Leu Asn Ser Gly Lys Leu Gln Leu Thr Leu Met Pro
      35              40              45

Gly Tyr Leu Arg Ser Ile Arg Ile Asp Arg Ser Asn Asp Asp Gln Thr
  50              55              60

His Ala Gly Arg Ile Ala Ala Phe Gln Asn Lys Phe Pro Thr Arg Ser
  65              70              75              80

Asn Asp Leu Leu Asn Leu Arg Asp Leu Glu Gln Gly Leu Glu Asn Leu
      85              90              95

Lys Cys Leu Pro Thr Ala Glu Ala Asp Leu Gln Ile Val Pro Val Glu
      100             105             110

Arg Glu Pro Asn Gln Ser Asp Val Val Val Gln Trp Arg Arg Leu Leu
      115             120             125

Pro Tyr Cys Val Ser Val Gly Met Asp Asn Ser Gly Ser Glu Ala Thr
      130             135             140

Gly Lys Tyr Gln Gly Asn Ile Thr Phe Ser Ala Asp Asn Pro Phe Gly
      145             150             155             160

Leu Ser Asp Met Phe Tyr Val Asn Tyr Gly Arg Ser Ile Gly Gly Thr
      165             170             175

Pro Asp Glu Glu Asn Phe Asp Gly His Arg Lys Glu Gly Gly Ser Asn
      180             185             190

Asn Tyr Ala Val His Tyr Ser Ala Pro Phe Gly Lys Trp Thr Trp Ala
      195             200             205

Phe Asn His Asn Gly Tyr Arg Tyr His Gln Ala Val Ser Gly Leu Ser
      210             215             220

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Glu Val Tyr Asp Tyr Asn Gly Lys Ser Tyr Asn Thr Asp Phe Gly Phe
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 Asn Arg Leu Leu Tyr Arg Asp Ala Lys Arg Lys Thr Tyr Leu Ser Val
 245 250 255
 Lys Leu Trp Thr Arg Glu Thr Lys Ser Tyr Ile Asp Asp Ala Glu Leu
 260 265 270
 Thr Val Gln Arg Arg Lys Thr Thr Gly Trp Leu Ala Glu Leu Ser His
 275 280 285
 Lys Gly Tyr Ile Gly Arg Ser Thr Ala Asp Phe Lys Leu Lys Tyr Lys
 290 295 300
 His Gly Thr Gly Met Lys Asp Ala Leu Arg Ala Pro Glu Glu Ala Phe
 305 310 315 320
 Gly Glu Gly Thr Ser Arg Met Lys Ile Trp Thr Ala Ser Ala Asp Val
 325 330 335
 Asn Thr Pro Phe Gln Ile Gly Lys Gln Leu Phe Ala Tyr Asp Thr Ser
 340 345 350
 Val His Ala Gln Trp Asn Lys Thr Pro Leu Thr Ser Gln Asp Lys Leu
 355 360 365
 Ala Ile Gly Gly His His Thr Val Arg Gly Phe Asp Gly Glu Met Ser
 370 375 380
 Leu Pro Ala Glu Arg Gly Trp Tyr Trp Arg Asn Asp Leu Ser Trp Gln
 385 390 395 400
 Phe Lys Pro Gly His Gln Leu Tyr Leu Gly Ala Asp Val Gly His Val
 405 410 415
 Ser Gly Gln Ser Ala Lys Trp Leu Ser Gly Gln Thr Leu Ala Gly Thr
 420 425 430
 Ala Ile Gly Ile Arg Gly Gln Ile Lys Leu Gly Gly Asn Leu His Tyr
 435 440 445
 Asp Ile Phe Thr Gly Arg Ala Leu Lys Lys Pro Glu Tyr Phe Gln Thr
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 Lys Lys Trp Val Thr Gly Phe Gln Val Gly Tyr Ser Phe
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<210> 2855

<211> 1788

<212> DNA

<213> *Neisseria meningitidis*

<400> 2855

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<210> 2856

<211> 595

<212> PRT

<213> Neisseria meningitidis

<400> 2856

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Met Lys Leu Pro Leu Ser Tyr Leu Pro Asn Ile Arg Phe Leu Ser Trp
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Cys Cys Leu Leu Ala Gly Ile Ile Ala Pro Ala Thr Leu Leu Ala Ser
      20             25            30

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Pro Asn Pro Ala Glu Ile Arg Met Gln Gln Asp Ile Gln Gln Arg Gln
      35             40            45

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Arg Glu Glu Gln Leu Arg Gln Thr Met Gln Pro Glu Ser Asp Val Arg
      50             55            60

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Leu His Gln Lys Asn Thr Gly Glu Thr Val Asn Gln Leu Met Gly Asp
      65             70            75            80

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Asp Ser Ser Gln Pro Cys Phe Ala Ile Asn Glu Val Val Leu Glu Gly
      85             90            95

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Glu His His Ala Arg Phe Gln Phe Ala Leu Lys Arg Ala Leu Arg Glu
      100            105           110

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Thr	Gly	Phe	Gln	Ala	Gly	Lys	Cys	Leu	His	Ala	Gly	Asn	Ile	Asn	Gln	115	120	125
Ile	Met	Ser	Leu	Ala	Gln	Asn	Ala	Leu	Ile	Gly	Arg	Gly	Tyr	Thr	Thr	130	135	140
Thr	Arg	Ile	Leu	Ala	Ala	Pro	Gln	Asp	Leu	Asn	Ser	Gly	Lys	Leu	Gln	145	150	155
Leu	Thr	Leu	Ile	Pro	Ser	Tyr	Leu	Arg	Ser	Ile	Arg	Ile	Asp	Arg	Ser	165	170	175
Asn	Asp	Asp	Gln	Thr	His	Ala	Gly	Arg	Ile	Ala	Ala	Phe	Gln	Asn	Lys	180	185	190
Phe	Pro	Thr	Arg	Ser	Asn	Asp	Leu	Leu	Asn	Leu	Arg	Asp	Leu	Glu	Gln	195	200	205
Gly	Leu	Glu	Asn	Leu	Lys	Arg	Leu	Pro	Thr	Ala	Glu	Ala	Asp	Leu	Gln	210	215	220
Ile	Val	Pro	Val	Glu	Gly	Glu	Pro	Asn	Gln	Ser	Asp	Val	Val	Val	Gln	225	230	235
Trp	Arg	Gln	Arg	Leu	Leu	Pro	Tyr	Arg	Val	Ser	Val	Gly	Met	Asp	Asn	245	250	255
Ser	Gly	Ser	Glu	Ala	Thr	Gly	Lys	Tyr	Gln	Gly	Asn	Ile	Thr	Phe	Ser	260	265	270
Ala	Asp	Asn	Pro	Leu	Gly	Leu	Ser	Asp	Met	Phe	Tyr	Val	Asn	Tyr	Gly	275	280	285
Arg	Ser	Ile	Gly	Gly	Thr	Pro	Asp	Glu	Glu	Ser	Phe	Asp	Gly	His	Arg	290	295	300
Lys	Glu	Gly	Gly	Ser	Asn	Asn	Tyr	Ala	Val	His	Tyr	Ser	Ala	Pro	Phe	305	310	315
Gly	Lys	Trp	Thr	Trp	Ala	Phe	Asn	His	Asn	Gly	Tyr	Arg	Tyr	His	Gln	325	330	335
Ala	Val	Ser	Gly	Leu	Ser	Glu	Val	Tyr	Asp	Tyr	Asn	Gly	Lys	Ser	Tyr	340	345	350
Asn	Thr	Asp	Phe	Gly	Phe	Asn	Arg	Leu	Leu	Tyr	Arg	Asp	Ala	Lys	Arg	355	360	365
Lys	Thr	Tyr	Leu	Gly	Val	Lys	Leu	Trp	Met	Arg	Glu	Thr	Lys	Ser	Tyr	370	375	380
Ile	Asp	Asp	Ala	Glu	Leu	Thr	Val	Gln	Arg	Arg	Lys	Thr	Ala	Gly	Trp	385	390	395
Leu	Ala	Glu	Leu	Ser	His	Lys	Glu	Tyr	Ile	Gly	Arg	Ser	Thr	Ala	Asp	405	410	415

Phe Lys Leu Lys Tyr Lys Arg Gly Thr Gly Met Lys Asp Ala Leu Arg
 420 425 430
 Ala Pro Glu Glu Ala Phe Gly Glu Gly Thr Ser Arg Met Lys Ile Trp
 435 440 445
 Thr Ala Ser Ala Asp Val Asn Thr Pro Phe Gln Ile Gly Lys Gln Leu
 450 455 460
 Phe Ala Tyr Asp Thr Ser Val His Ala Gln Trp Asn Lys Thr Pro Leu
 465 470 475 480
 Thr Ser Gln Asp Lys Leu Ala Ile Gly Gly His His Thr Val Arg Gly
 485 490 495
 Phe Asp Gly Glu Met Ser Leu Ser Ala Glu Arg Gly Trp Tyr Trp Arg
 500 505 510
 Asn Asp Leu Ser Trp Gln Phe Lys Pro Gly His Gln Leu Tyr Leu Gly
 515 520 525
 Ala Asp Val Gly His Val Ser Gly Gln Ser Ala Lys Trp Leu Ser Gly
 530 535 540
 Gln Thr Leu Val Gly Thr Ala Ile Gly Ile Arg Gly Gln Ile Lys Leu
 545 550 555 560
 Gly Gly Asn Leu His Tyr Asp Ile Phe Thr Gly Arg Ala Leu Lys Lys
 565 570 575
 Pro Glu Phe Phe Gln Ser Arg Lys Trp Ala Ser Gly Phe Gln Val Gly
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 Tyr Thr Phe
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<210> 2857
 <211> 612
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 2857
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 gaggacttgg tgcaaaaggc aaccgataag gccgttgcca acgaatccgg caacggcttg 300
 aaaaacaccg tcgacacat cgcaatggcg cggacggcag cccccgattc cgccgccgcc 360
 caattcttta tcaatctggc ggacaacggg tcgctcgact acaaaaacgg acaatacggc 420
 tacaccgttt tcggcagggt agaaagcgga atggacaccg tttccaaaat cgcccgctc 480
 aaaaccgcca cgcgcggctt ttatcaaaac gtaccgttac agcccgtaa aatccgtcgc 540
 gttgttgcg gcagtaaca cgcagacaga cgttcagacg gcgtcgcccg tttccaaaaa 600
 aacgccgttt aa 612

<210> 2858
 <211> 185
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2858
 Met Lys Pro Lys Phe Lys Thr Val Leu Thr Ala Leu Leu Leu Ala Val
 1 5 10 15
 Ser Leu Pro Ser Met Ala Ala Thr Arg Val Leu Met Glu Thr Asp Met
 20 25 30
 Gly Asn Ile Arg Leu Val Leu Asp Glu Ser Lys Ala Ser Lys Thr Val
 35 40 45
 Ala Asn Phe Val Arg Tyr Ala Arg Lys Gly Phe Tyr Asp Asn Thr Ile
 50 55 60
 Phe His Arg Val Ile Gly Gly Phe Val Ile Gln Gly Asp Gly Leu Thr
 65 70 75 80
 Glu Asp Leu Val Gln Lys Ala Thr Asp Lys Ala Val Ala Asn Glu Ser
 85 90 95
 Gly Asn Gly Leu Lys Asn Thr Val Gly Thr Ile Ala Met Ala Arg Thr
 100 105 110
 Ala Ala Pro Asp Ser Ala Ala Ala Gln Phe Phe Ile Asn Leu Ala Asp
 115 120 125
 Asn Gly Ser Leu Asp Tyr Lys Asn Gly Gln Tyr Gly Tyr Thr Val Phe
 130 135 140
 Gly Arg Val Glu Ser Gly Met Asp Thr Val Ser Lys Ile Ala Arg Val
 145 150 155 160
 Lys Thr Ala Thr Arg Gly Phe Tyr Gln Asn Val Pro Val Gln Pro Val
 165 170 175
 Lys Ile Arg Arg Val Val Val Gly Gln
 180 185

<210> 2859
 <211> 557
 <212> DNA
 <213> Neisseria meningitidis

<400> 2859
 atgaaaccca aattcaaaac cgttttaacc gcgctgcttt tggcgggttc cctgccgtct 60
 atggcggcaa cccatgtttt gatggaaacc gatatgggca atatccgttt ggttttggac 120
 gaatccaaag ccccaaaaac cgttgctaatt ttcgtgcgct atgcccgaag aggcctttac 180
 gacgacaccg tttttcaccg cgttatcgac ggttttgta tccagggcgg tggattgacc 240
 gaggacttgg cacaaaaggc aagcgataag gccgttgcca acgaatccgg caacggcctg 300
 aaaaacaccg cgggcaccat cgccatggcg cggacgacag ccccgattc cgccaccagc 360
 caattcttta tcaatctggc ggaccakctt cgctcgacta caaaaacgga caatacggct 420
 ataccgtttt cggcagggtc gaaagcggca tgaacaccgt ttccaaaatc gcccgcgctca 480

aaaccgccac ggcgggcttt tatcaaaacg tacccgtaca gcccgtaaa atccgtcgcg 540
 ttgttgtcg gcagtaa 557

<210> 2860
 <211> 185
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2860
 Met Lys Pro Lys Phe Lys Thr Val Leu Thr Ala Leu Leu Leu Ala Val
 1 5 10 15
 Ser Leu Pro Ser Met Ala Ala Thr His Val Leu Met Glu Thr Asp Met
 20 25 30
 Gly Asn Ile Arg Leu Val Leu Asp Glu Ser Lys Ala Pro Lys Thr Val
 35 40 45
 Ala Asn Phe Val Arg Tyr Ala Arg Lys Gly Phe Tyr Asp Asp Thr Val
 50 55 60
 Phe His Arg Val Ile Asp Gly Phe Val Ile Gln Gly Gly Gly Leu Thr
 65 70 75 80
 Glu Asp Leu Ala Gln Lys Ala Ser Asp Lys Ala Val Ala Asn Glu Ser
 85 90 95
 Gly Asn Gly Leu Lys Asn Thr Ala Gly Thr Ile Ala Met Ala Arg Thr
 100 105 110
 Thr Ala Pro Asp Ser Ala Thr Ser Gln Phe Phe Ile Asn Leu Ala Asp
 115 120 125
 Xaa Xaa Ser Leu Asp Tyr Lys Asn Gly Gln Tyr Gly Tyr Thr Val Phe
 130 135 140
 Gly Arg Val Glu Ser Gly Met Asn Thr Val Ser Lys Ile Ala Arg Val
 145 150 155 160
 Lys Thr Ala Thr Arg Gly Phe Tyr Gln Asn Val Pro Val Gln Pro Val
 165 170 175
 Lys Ile Arg Arg Val Val Val Gly Gln
 180 185

<210> 2861
 <211> 558
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2861
 atgaaaccca aattcaaaac cgttttaacc gcgctgcttt tggcgggttc cctgccgtct 60
 atggcggcaa cccatgtttt gatggaaacc gatatgggca atatccgttt gggttttgac 120
 gaatccaaag caccctaaaac cggtgccaat ttcgtgcgct atgcccgaag aggtttttac 180

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gacaatacga tttttcaccg cgtcatcggc ggcttcgtta tccaaggcgg cggattgacc 240
gaggacttgg cacaaaaggc aagcgataag gccgttgcca acgaatccgg caacggcttg 300
aaaaaactg tcggcaccat cgccatggcg cggacggcgg atccggattc cgccaccagc 360
caattcttta tcaatctggt ggacaatgat tcgctcaact acaaaaacgg acaatacggc 420
tataccgttt tcggcagggt cgaaagcggc atgaacaccg tttccaaaat cgcccgcgtc 480
aaaaccgcca cgcgcggtt ttatcaaac gtaccgtac agcccgtcaa aatccgtcgc 540
gttgtgtgctg ggcagtaa 558

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<210> 2862
 <211> 185
 <212> PRT
 <213> *Neisseria meningitidis*

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<400> 2862
Met Lys Pro Lys Phe Lys Thr Val Leu Thr Ala Leu Leu Leu Ala Val
  1                               5                               10                               15

Ser Leu Pro Ser Met Ala Ala Thr His Val Leu Met Glu Thr Asp Met
                20                               25                               30

Gly Asn Ile Arg Leu Val Leu Asp Glu Ser Lys Ala Pro Lys Thr Val
    35                               40                               45

Ala Asn Phe Val Arg Tyr Ala Arg Lys Gly Phe Tyr Asp Asn Thr Ile
    50                               55                               60

Phe His Arg Val Ile Gly Gly Phe Val Ile Gln Gly Gly Gly Leu Thr
    65                               70                               75                               80

Glu Asp Leu Ala Gln Lys Ala Ser Asp Lys Ala Val Ala Asn Glu Ser
                85                               90                               95

Gly Asn Gly Leu Lys Asn Thr Val Gly Thr Ile Ala Met Ala Arg Thr
    100                               105                               110

Ala Asp Pro Asp Ser Ala Thr Ser Gln Phe Phe Ile Asn Leu Val Asp
    115                               120                               125

Asn Asp Ser Leu Asn Tyr Lys Asn Gly Gln Tyr Gly Tyr Thr Val Phe
    130                               135                               140

Gly Arg Val Glu Ser Gly Met Asn Thr Val Ser Lys Ile Ala Arg Val
    145                               150                               155                               160

Lys Thr Ala Thr Arg Gly Phe Tyr Gln Asn Val Pro Val Gln Pro Val
                165                               170                               175

Lys Ile Arg Arg Val Val Val Gly Gln
    180                               185

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<210> 2863
 <211> 339
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2863
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tttaaaccac atccgtggga cgccgcgtca ttttgggaat tgaaaaatta cgccaatccc 120
tatccgggat cagcctcggc ggcaattgac caatatccat cgaaagcaag acgaaggcaa 180
ctgaaagaca tgcaagagtg cggtatgac ccaatagacg gcggaagtc tgaagcagat 240
gcctgcctga ggaaaaaagg ctggtgtcgt aagggtttcg acccttatcc cgaaaacaaa 300
aaatacgaat ggctcgcaga agaaggaaaa acaaaatga 339

<210> 2864
<211> 112
<212> PRT
<213> *Neisseria meningitidis*

<400> 2864
Met Lys Tyr Ile Val Ser Ile Ser Leu Ala Met Gly Leu Ala Ala Cys
1 5 10 15
Ser Phe Gly Gly Phe Lys Pro Asn Pro Trp Asp Ala Ala Ser Phe Trp
20 25 30
Glu Leu Lys Asn Tyr Ala Asn Pro Tyr Pro Gly Ser Ala Ser Ala Ala
35 40 45
Leu Asp Gln Tyr Pro Ser Lys Ala Arg Arg Arg Gln Leu Lys Asp Met
50 55 60
Gln Glu Cys Gly Tyr Asp Pro Ile Asp Gly Gly Lys Ser Glu Ala Asp
65 70 75 80
Ala Cys Leu Arg Lys Lys Gly Trp Cys Arg Lys Gly Phe Asp Pro Tyr
85 90 95
Pro Glu Asn Lys Lys Tyr Glu Trp Pro Arg Glu Glu Gly Lys Thr Lys
100 105 110

<210> 2865
<211> 689
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 2865
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gacacgcagg cgcggtcga acggcagcag aaacagattg aagccctgca acagcagctc 120
gcacagcagg cagacgatac ggttaccaa ctgactcccg aagcagtcaa agacaccatt 180
ctgtcccagg cgcaggcaaa cggaacaac ggtcagcccg ttaccggcaa agacgggcag 240
cagtatatatt acgaccaatc gacaggaagc tggctgctgc aaagcctgat tggcgcggcg 300
gcaggcgctt ttatcggaac cgcgctggca aacaaattca cacgggcggg caaccaagac 360
agccccgtcg cccgtcgcgc gctgctgcc taccatcagt ccgcacgccc caatgcgcgc 420
accagcaggg atttgaacac gcgcagcctc cgtgcaaac aacaggcggc gcaggcgagc 480
cgttaccgcc cgacaacgcg cccgccgctc aattaccgcc atcgcgctat gcgcggtttc 540
ggcagaaggc ggtaaacccg gcgcgtcaat gccgtctgaa gggctttcag acggcatttt 600
tgtattttgtt aggggcattg ttatgttgcc gtttgatttt cagacggcat tttgtttcca 660

agcgtttgat gtcgggatgg caattctga

<210> 2866

<211> 229

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2866

Met Lys Lys Ile Ile Ala Ser Ala Leu Ile Ala Thr Phe Ala Leu Thr
 1 5 10 15
 Ala Cys Gln Asp Asp Thr Gln Ala Arg Leu Glu Arg Gln Gln Lys Gln
 20 25 30
 Ile Glu Ala Leu Gln Gln Gln Leu Ala Gln Gln Ala Asp Asp Thr Val
 35 40 45
 Tyr Gln Leu Thr Pro Glu Ala Val Lys Asp Thr Ile Pro Ala Gln Ala
 50 55 60
 Gln Ala Asn Gly Asn Asn Gly Gln Pro Val Thr Gly Lys Arg Arg Ala
 65 70 75 80
 Ala Val Tyr Leu Arg Pro Ile Asp Arg Lys Leu Ala Ala Ala Lys Pro
 85 90 95
 Asp Trp Arg Gly Gly Arg Arg Val Tyr Arg Gln Arg Ala Gly Lys Gln
 100 105 110
 Ile His Thr Gly Gly Gln Pro Arg Gln Pro Arg Arg Pro Ser Arg Ala
 115 120 125
 Cys Cys Leu Pro Ser Val Arg Thr Pro Gln Cys Ala His Gln Gln Gly
 130 135 140
 Phe Glu His Ala Gln Pro Pro Cys Lys Thr Thr Gly Gly Ala Gly Ala
 145 150 155 160
 Ala Leu Pro Pro Asp Asn Ala Pro Ala Arg Gln Leu Pro Pro Ser Arg
 165 170 175
 Tyr Ala Arg Phe Arg Gln Lys Ala Val Asn Pro Ala Arg Gln Cys Arg
 180 185 190
 Leu Lys Gly Phe Gln Thr Ala Phe Leu Tyr Leu Leu Gly Ala Leu Leu
 195 200 205
 Cys Cys Arg Leu Ile Phe Arg Arg His Phe Val Ser Lys Arg Leu Met
 210 215 220
 Ser Gly Trp Gln Phe
 225

<210> 2867

<211> 617

<212> DNA

<213> *Neisseria meningitidis*

<400> 2867

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caggcaaacg gcaacaacgg gcaacccggt accggtaaag acgggcagca gtatatttac 180
gaccaatcga caggaagctg gctgctgcaa agcctggctg gcgcggcggc aggcgcgttt 240
atcggaacg cgctggcaaa caaatcaca cgggcaggca accaagacag tcccgtcgcc 300
cggcgcgcgc gtgcagccta ccatacgtcc gcacgcccc atgcgcgcay cagcagggat 360
ttgaacacgc gcagcctccg tgcaaaacaa caggcggcgc akgcgcagcg ttaccgccc 420
acaacgcgcc cgscgscsaa ttaccgcgcg cccgctatgc gcggtttcgg caggaggcgg 480
taaaccgcgc gcgccaatgc cgtctgaaga gctttcagac ggcatttntg catttgttag 540
ggacattggt atgttgccgt ttgattttca gacggcattt tgtttccaag cgtttgatgt 600
cgggatggca attctga 617
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<210> 2868

<211> 205

<212> PRT

<213> *Neisseria meningitidis*

<400> 2868

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Arg Leu Glu Gln Gln Gln Lys Gln Ile Glu Ala Leu Gln Gln Gln Leu
  1                      5                      10                      15

Ala Gln Gln Ala Asp Asp Thr Val Tyr Gln Leu Thr Pro Glu Ala Val
      20                      25                      30

Lys Asp Thr Ile Pro Ala Glu Ala Gln Ala Asn Gly Asn Asn Gly Gln
      35                      40                      45

Pro Val Thr Gly Xaa Arg Arg Ala Ala Val Tyr Leu Arg Pro Ile Asp
      50                      55                      60

Arg Lys Leu Ala Ala Ala Lys Pro Gly Arg Arg Gly Gly Arg Arg Val
      65                      70                      75                      80

Tyr Arg Gln Arg Ala Gly Lys Gln Ile His Thr Gly Arg Gln Pro Arg
      85                      90                      95

Gln Ser Arg Arg Pro Ala Arg Ala Cys Ser Leu Pro Ser Val Arg Thr
      100                     105                     110

Pro Gln Cys Ala His Gln Gln Gly Phe Glu His Ala Gln Pro Pro Cys
      115                     120                     125

Lys Thr Thr Gly Gly Ala Xaa Ala Ala Leu Pro Pro Asp Asn Ala Pro
      130                     135                     140

Xaa Arg Gln Leu Pro Pro Pro Arg Tyr Ala Arg Phe Arg Gln Glu Ala
      145                     150                     155                     160

Val Asn Pro Ala Arg Gln Cys Arg Leu Lys Ser Phe Gln Thr Ala Phe
      165                     170                     175

Xaa His Leu Leu Gly Thr Leu Leu Cys Cys Arg Leu Ile Phe Arg Arg
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180

185

190

His Phe Val Ser Lys Arg Leu Met Ser Gly Trp Gln Phe
 195 200 205

<210> 2869

<211> 689

<212> DNA

<213> *Neisseria meningitidis*

<400> 2869

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atgaaaaaaaa tcatcgccctc cgcgcttattc gcaacatttcg cactcgccgc ctgccaagac 60
gacgcgcagg cgcggtctga acagcagcag aaacagattg aagccctgca acagcagctc 120
gcacagcagg cagacgatac ggtttaccaa ctgactcccg aagcagtcaa agacaccatt 180
cctgccgaag cacaggcaaa cggcaacaac gggcaaccgg ttaccggtaa agacgggcag 240
cagtatatatt acgaccaatc gacaggaagc tggtctgtgc aaagcctggc cggcgcggcg 300
gcaggcgcggt ttatcggaac cgcgctggca aacaaattca cacgggcagg caaccaagac 360
agtcccgctg cccggcgcgcg cgtgcccgcg taccatcagt ccgcacatcc caatgcgcgc 420
accagcaggg atttgaacac gcgcagcctc cgtgcaaaaac aacaggcggc gcaggcgcg 480
cgttaccgcc cgacaacgcg cccgcccgcg aattaccgcc gccccgccat gcgcggtttc 540
ggcagaaggc ggtaaattccg gcgtgccaat gccgtctgaa gggctttcag acggcatttt 600
tgtatttggt agggacattg ttatgttgcc gtttgatttt tagacggcat tttgtttcca 660
agagtttgat gtcgggatgg caattctga 689

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<210> 2870

<211> 228

<212> PRT

<213> *Neisseria meningitidis*

<400> 2870

Met Lys Lys Ile Ile Ala Ser Ala Leu Ile Ala Thr Phe Ala Leu Ala
 1 5 10 15

Ala Cys Gln Asp Asp Ala Gln Ala Arg Leu Glu Gln Gln Gln Lys Gln
 20 25 30

Ile Glu Ala Leu Gln Gln Gln Leu Ala Gln Gln Ala Asp Asp Thr Val
 35 40 45

Tyr Gln Leu Thr Pro Glu Ala Val Lys Asp Thr Ile Pro Ala Glu Ala
 50 55 60

Gln Ala Asn Gly Asn Asn Gly Gln Pro Val Thr Xaa Arg Arg Ala Ala
 65 70 75 80

Val Tyr Leu Arg Pro Ile Asp Arg Lys Leu Ala Ala Ala Lys Pro Gly
 85 90 95

Arg Arg Gly Gly Arg Arg Val Tyr Arg Gln Arg Ala Gly Lys Gln Ile
 100 105 110

His Thr Gly Arg Gln Pro Arg Gln Ser Arg Arg Pro Ala Arg Ala Cys
 115 120 125

Arg Leu Pro Ser Val Arg Thr Ser Gln Cys Ala His Gln Gln Gly Phe

130	135	140
Glu His Ala Gln Pro Pro Cys Lys Thr Thr Gly Gly Ala Gly Ala Ala		
145	150	155 160
Leu Pro Pro Asp Asn Ala Pro Ala Arg Gln Leu Pro Pro Pro Arg His		
	165	170 175
Ala Arg Phe Arg Gln Lys Ala Val Asn Pro Ala Cys Gln Cys Arg Leu		
	180	185 190
Lys Gly Phe Gln Thr Ala Phe Leu Tyr Leu Leu Gly Thr Leu Leu Cys		
	195	200 205
Cys Arg Leu Ile Phe Arg Arg His Phe Val Ser Lys Ser Leu Met Ser		
	210	215 220
Gly Trp Gln Phe		
225		

<210> 2871
 <211> 1518
 <212> DNA
 <213> Neisseria meningitidis

<400> 2871

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gtgtcggata	agtgggcgga	atcagattgg	aaagttgaaa	atgatgcccc	gcgcgtggtt	180
gacggggatt	ttttgttggc	gcatecgaaa	atgttggaac	atagtttgcg	cgacgcgctc	240
aacggcaatc	aggcggattt	aatcgcttcg	ttggcggatt	tgtatgccaa	gctgccggat	300
tatgacgcgg	ttttgtacgg	cagggcgcg	gctttgctgg	cgaaattggc	gggaaggccg	360
gcggaggcgg	tggcgcggtg	tcgggaactg	cacggggaaa	atgcggcaga	cgagcggatt	420
ttgctggatt	tggcggcggc	ggagtttgac	gatttccggc	tgaagtcggc	agaaaggcat	480
tttgccggag	cggcaaaaatt	ggatttgccg	gcaccggttt	tggaaaatgt	ggggcgtttt	540
cggaaaaaaa	cggaggggct	gacgggctgg	cgtttttcgg	gcggcatcag	tccggcgggtc	600
aatagaaatg	ccaataatgc	cgcgcgcgca	tattgccggc	aaaacggagg	ccggcagata	660
tgcagtgtca	gccgggcgga	gcgggcggca	gggttgaatt	atgaaatcga	ggcggaaaaag	720
ctgacgccgt	tggcagataa	tcattatttg	ttgttccggt	ccaatatcgg	cggcacgagc	780
tattattttca	gtaaaaaatc	agcttatgat	gacgggttcg	gcagggcgta	tttgggttgg	840
cagtataaaa	atgcacggca	gacggcgggg	attttgccgt	tttatcaggt	gcagttgtcg	900
ggcagcgacg	gctttgatgc	gaaaacaaaa	cgggtaaaca	accgccgcct	gccgccgtat	960
atgctggcgc	acggagtcgg	cgtgcagctg	tcccatactt	accgcccaaa	cccgggatgg	1020
caatttttcgg	tcgcgctgga	acattaccgc	caacgctacc	gcgaacagga	tagggcggaa	1080
tacaataacg	gcaggcagga	cgggttttat	gtttcgtcgg	caaaacgttt	gggcgaatcg	1140
gcaactgtgt	tcggcggcgt	gcagtttgtg	cggtttgtgc	cgaaacgcga	aacggtgggc	1200
ggcgcgggtca	ataatgccgc	ctaccggcgc	aacggtgttt	atgccggttg	ggcgcaggag	1260
tggcggcagt	tgggcgggtt	gaacagtcgg	gtttccgcgt	cttatgcccg	ccgcaactat	1320
aagggcattg	cggctttctc	gacagaggcg	caacgcgaacc	gcgaatggaa	tgtctcgctg	1380
gctttgagcc	acgacaagtt	gtcgtacaaa	ggtatcgtgc	cggcgttgaa	ttatcgtttc	1440
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gcggattggc	ggttttga					1518

<210> 2872

<211> 505
<212> PRT
<213> Neisseria meningitidis

<400> 2872
Met Leu Tyr Phe Arg Tyr Gly Phe Leu Val Val Trp Cys Ala Ala Gly
1 5 10 15
Val Ser Ala Ala Tyr Gly Ala Asp Ala Pro Ala Ile Leu Asp Asp Lys
20 25 30
Ala Leu Leu Gln Val Gln Arg Ser Val Ser Asp Lys Trp Ala Glu Ser
35 40 45
Asp Trp Lys Val Glu Asn Asp Ala Pro Arg Val Val Asp Gly Asp Phe
50 55 60
Leu Leu Ala His Pro Lys Met Leu Glu His Ser Leu Arg Asp Ala Leu
65 70 75 80
Asn Gly Asn Gln Ala Asp Leu Ile Ala Ser Leu Ala Asp Leu Tyr Ala
85 90 95
Lys Leu Pro Asp Tyr Asp Ala Val Leu Tyr Gly Arg Ala Arg Ala Leu
100 105 110
Leu Ala Lys Leu Ala Gly Arg Pro Ala Glu Ala Val Ala Arg Tyr Arg
115 120 125
Glu Leu His Gly Glu Asn Ala Ala Asp Glu Arg Ile Leu Leu Asp Leu
130 135 140
Ala Ala Ala Glu Phe Asp Asp Phe Arg Leu Lys Ser Ala Glu Arg His
145 150 155 160
Phe Ala Glu Ala Ala Lys Leu Asp Leu Pro Ala Pro Val Leu Glu Asn
165 170 175
Val Gly Arg Phe Arg Lys Lys Thr Glu Gly Leu Thr Gly Trp Arg Phe
180 185 190
Ser Gly Gly Ile Ser Pro Ala Val Asn Arg Asn Ala Asn Asn Ala Ala
195 200 205
Pro Gln Tyr Cys Arg Gln Asn Gly Gly Arg Gln Ile Cys Ser Val Ser
210 215 220
Arg Ala Glu Arg Ala Ala Gly Leu Asn Tyr Glu Ile Glu Ala Glu Lys
225 230 235 240
Leu Thr Pro Leu Ala Asp Asn His Tyr Leu Leu Phe Arg Ser Asn Ile
245 250 255
Gly Gly Thr Ser Tyr Tyr Phe Ser Lys Lys Ser Ala Tyr Asp Asp Gly
260 265 270

Phe Gly Arg Ala Tyr Leu Gly Trp Gln Tyr Lys Asn Ala Arg Gln Thr
275 280 285

Ala Gly Ile Leu Pro Phe Tyr Gln Val Gln Leu Ser Gly Ser Asp Gly
290 295 300

Phe Asp Ala Lys Thr Lys Arg Val Asn Asn Arg Arg Leu Pro Pro Tyr
305 310 315 320

Met Leu Ala His Gly Val Gly Val Gln Leu Ser His Thr Tyr Arg Pro
325 330 335

Asn Pro Gly Trp Gln Phe Ser Val Ala Leu Glu His Tyr Arg Gln Arg
340 345 350

Tyr Arg Glu Gln Asp Arg Ala Glu Tyr Asn Asn Gly Arg Gln Asp Gly
355 360 365

Phe Tyr Val Ser Ser Ala Lys Arg Leu Gly Glu Ser Ala Thr Val Phe
370 375 380

Gly Gly Trp Gln Phe Val Arg Phe Val Pro Lys Arg Glu Thr Val Gly
385 390 395 400

Gly Ala Val Asn Asn Ala Ala Tyr Arg Arg Asn Gly Val Tyr Ala Gly
405 410 415

Trp Ala Gln Glu Trp Arg Gln Leu Gly Gly Leu Asn Ser Arg Val Ser
420 425 430

Ala Ser Tyr Ala Arg Arg Asn Tyr Lys Gly Ile Ala Ala Phe Ser Thr
435 440 445

Glu Ala Gln Arg Asn Arg Glu Trp Asn Val Ser Leu Ala Leu Ser His
450 455 460

Asp Lys Leu Ser Tyr Lys Gly Ile Val Pro Ala Leu Asn Tyr Arg Phe
465 470 475 480

Gly Arg Thr Glu Ser Asn Val Pro Tyr Ala Lys Arg Arg Asn Ser Glu
485 490 495

Val Phe Val Ser Ala Asp Trp Arg Phe
500 505

<210> 2873

<211> 1518

<212> DNA

<213> Neisseria meningitidis

<400> 2873

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gtgtcggata agtgggcgga atcggtattg aaagttgaca atgatgcccc gcgcgtggtt 180
gacggggatt ttttgttggc gcatccgaaa atgttgaac atagtgtgcg cgacgtgctc 240
aacggcaatc aggcggattt gatcgcttcg ttggcggatt tgtatgccaa gctgccggat 300

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tatgacgcgg ttttgtacgg caggggcgcgg gctttgctgg cgaaattggc gggaaggccg 360
gcggaggcgg tggcgcggtg tcgggaactg cacggggaaa atgcggcaga cgagcggatt 420
ttgctggatt tggcgcgggc ggagtttgac gatttccggc tgaagtcggc agaaaggcat 480
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aatagaaatg ccaataatgc cgcgcgcgag tattgccggc aaaacggagg ccggcagata 660
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ctgacggcgt tggcagataa tcattatattg ttgttccgtt ccaatatcgg cggcacgagc 780
tattatttca gtaaaaaatc agcttatgac gacgggttcg gcagagcgta tttgggttg 840
cagtataaaa atgcacggca gacggcgggg attttgccgt tttatcaggc gcagttgtcg 900
ggcagcgacg gctttgatgc gaaaacaaaa cgggtaaaca accgccgctt gccgccgtat 960
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caattttcgg tcgcgctgga acattaccgc caacgctacc gcgaacagga tagggcggaa 1080
tacaataacg gtcggcagga cgggttttat gtttcgctcg caaaacgttt gggcgaatcg 1140
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ggcgcgggtc ataatgccgc ctaccggcgc aacggtgttt atgccggctg ggcgcaggag 1260
tggcggcagt tgggcgggtt gaacagtcgg gtttcgcgct cttatgcccg ccgcaactat 1320
aagggcgttg cggttttctc gacagaggcg caacgcaacc gcgaatggaa tgtctcgctg 1380
gctttgagcc acgacaagtt gtcgtacaaa ggtatcgtgc ccgcgttgaa ttatcgtttc 1440
ggcaggacgg aaagtaatgt gccgtatgcg aaacgccgca acagcgaggc gtttgtgtcg 1500
gcggattggc ggttttga 1518

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<210> 2874

<211> 505

<212> PRT

<213> *Neisseria meningitidis*

<400> 2874

Met Leu Tyr Phe Arg Tyr Gly Phe Leu Val Val Trp Cys Ala Ala Gly
1 5 10 15

Val Ser Ala Ala Tyr Gly Ala Asp Ala Pro Ala Ile Leu Asp Asp Lys
20 25 30

Ala Leu Leu Gln Val Gln Arg Ser Val Ser Asp Lys Trp Ala Glu Ser
35 40 45

Asp Trp Lys Val Asp Asn Asp Ala Pro Arg Val Val Asp Gly Asp Phe
50 55 60

Leu Leu Ala His Pro Lys Met Leu Glu His Ser Leu Arg Asp Val Leu
65 70 75 80

Asn Gly Asn Gln Ala Asp Leu Ile Ala Ser Leu Ala Asp Leu Tyr Ala
85 90 95

Lys Leu Pro Asp Tyr Asp Ala Val Leu Tyr Gly Arg Ala Arg Ala Leu
100 105 110

Leu Ala Lys Leu Ala Gly Arg Pro Ala Glu Ala Val Ala Arg Tyr Arg
115 120 125

Glu Leu His Gly Glu Asn Ala Ala Asp Glu Arg Ile Leu Leu Asp Leu
130 135 140

Ala Ala Ala Glu Phe Asp Asp Phe Arg Leu Lys Ser Ala Glu Arg His

145		150		155		160									
Phe	Ala	Glu	Ala	Glu	Lys	Leu	Asp	Leu	Pro	Ala	Pro	Val	Leu	Glu	Asn
				165					170					175	
Val	Gly	Arg	Phe	Arg	Lys	Lys	Ala	Glu	Gly	Leu	Thr	Gly	Trp	Arg	Phe
			180					185					190		
Ser	Gly	Gly	Ile	Ser	Pro	Ala	Val	Asn	Arg	Asn	Ala	Asn	Asn	Ala	Ala
		195					200					205			
Pro	Gln	Tyr	Cys	Arg	Gln	Asn	Gly	Gly	Arg	Gln	Ile	Cys	Ser	Val	Ser
	210					215					220				
Arg	Ala	Glu	Arg	Ala	Ala	Gly	Leu	Asn	Tyr	Glu	Ile	Glu	Ala	Glu	Lys
225					230					235					240
Leu	Thr	Ala	Leu	Ala	Asp	Asn	His	Tyr	Leu	Leu	Phe	Arg	Ser	Asn	Ile
				245					250					255	
Gly	Gly	Thr	Ser	Tyr	Tyr	Phe	Ser	Lys	Lys	Ser	Ala	Tyr	Asp	Asp	Gly
			260					265					270		
Phe	Gly	Arg	Ala	Tyr	Leu	Gly	Trp	Gln	Tyr	Lys	Asn	Ala	Arg	Gln	Thr
		275					280					285			
Ala	Gly	Ile	Leu	Pro	Phe	Tyr	Gln	Val	Gln	Leu	Ser	Gly	Ser	Asp	Gly
	290					295					300				
Phe	Asp	Ala	Lys	Thr	Lys	Arg	Val	Asn	Asn	Arg	Arg	Leu	Pro	Pro	Tyr
305					310					315					320
Met	Leu	Ala	His	Gly	Val	Gly	Val	Gln	Leu	Ser	His	Thr	Tyr	Arg	Pro
				325					330					335	
Asn	Pro	Gly	Trp	Gln	Phe	Ser	Val	Ala	Leu	Glu	His	Tyr	Arg	Gln	Arg
			340					345					350		
Tyr	Arg	Glu	Gln	Asp	Arg	Ala	Glu	Tyr	Asn	Asn	Gly	Arg	Gln	Asp	Gly
		355					360					365			
Phe	Tyr	Val	Ser	Ser	Ala	Lys	Arg	Leu	Gly	Glu	Ser	Ala	Thr	Val	Phe
	370					375					380				
Gly	Gly	Trp	Gln	Phe	Val	Arg	Phe	Val	Pro	Lys	Arg	Glu	Thr	Val	Gly
385					390					395					400
Gly	Ala	Val	Asn	Asn	Ala	Ala	Tyr	Arg	Arg	Asn	Gly	Val	Tyr	Ala	Gly
			405						410					415	
Trp	Ala	Gln	Glu	Trp	Arg	Gln	Leu	Gly	Gly	Leu	Asn	Ser	Arg	Val	Ser
			420					425					430		
Ala	Ser	Tyr	Ala	Arg	Arg	Asn	Tyr	Lys	Gly	Val	Ala	Ala	Phe	Ser	Thr
		435					440					445			
Glu	Ala	Gln	Arg	Asn	Arg	Glu	Trp	Asn	Val	Ser	Leu	Ala	Leu	Ser	His

450 455 460
 Asp Lys Leu Ser Tyr Lys Gly Ile Val Pro Ala Leu Asn Tyr Arg Phe
 465 470 475 480
 Gly Arg Thr Glu Ser Asn Val Pro Tyr Ala Lys Arg Arg Asn Ser Glu
 485 490 495
 Val Phe Val Ser Ala Asp Trp Arg Phe
 500 505

<210> 2875
 <211> 609
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 2875
 atgaaaccca aaccacacac cgtccgcacc ctgattgccg ccgtcctcag ccttgccctc 60
 ggcggctgct tcagcgcagt cgtcggcggg gccgccgtcg gcgcaaaatc cgtcatcgac 120
 cgccgaacca cggcgcgca aaccgatgac aacgttatgg cgttgcgat cgaaaccacc 180
 gcccgttcct acctgcgcca aaacaaccaa accaaaggct acacgcccc aatctccgctc 240
 gtcggctaca accgccacct gctgctgctc ggacaagtcg ccaccgaagg cgaaaaacag 300
 ttcgtcggtc agattgcacg ttccgaacag gccgccgaag gcgtatacaa ctacattacc 360
 gtcgcctccc tgcgcgcac tgcgggcgac atcgccggcg acacttgga cactgccaaa 420
 gtcgcgcgcca cgctgctggg catcagcccc gctacacagg cgcgcgtcaa aatcattacc 480
 taaggcaatg taacctacgt tatgggcac ctcaccccc aagaacaggc gcagattacc 540
 caaaaagtca gcaccaccgt cggcgtacaa aaagtcatta ccctctacca aaactacgtc 600
 caacgctga 609

<210> 2876
 <211> 202
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 2876
 Met Lys Pro Lys Pro His Thr Val Arg Thr Leu Ile Ala Ala Val Leu
 1 5 10 15
 Ser Leu Ala Leu Gly Gly Cys Phe Ser Ala Val Val Gly Gly Ala Ala
 20 25 30
 Val Gly Ala Lys Ser Val Ile Asp Arg Arg Thr Thr Gly Ala Gln Thr
 35 40 45
 Asp Asp Asn Val Met Ala Leu Arg Ile Glu Thr Thr Ala Arg Ser Tyr
 50 55 60
 Leu Arg Gln Asn Asn Gln Thr Lys Gly Tyr Thr Pro Gln Ile Ser Val
 65 70 75 80
 Val Gly Tyr Asn Arg His Leu Leu Leu Leu Gly Gln Val Ala Thr Glu
 85 90 95
 Gly Glu Lys Gln Phe Val Gly Gln Ile Ala Arg Ser Glu Gln Ala Ala
 100 105 110

Glu Gly Val Tyr Asn Tyr Ile Thr Val Ala Ser Leu Pro Arg Thr Ala
 115 120 125
 Gly Asp Ile Ala Gly Asp Thr Trp Asn Thr Ser Lys Val Arg Ala Thr
 130 135 140
 Leu Leu Gly Ile Ser Pro Ala Thr Gln Ala Arg Val Lys Ile Ile Thr
 145 150 155 160
 Tyr Gly Asn Val Thr Tyr Val Met Gly Ile Leu Thr Pro Glu Glu Gln
 165 170 175
 Ala Gln Ile Thr Gln Lys Val Ser Thr Thr Val Gly Val Gln Lys Val
 180 185 190
 Ile Thr Leu Tyr Gln Asn Tyr Val Gln Arg
 195 200

<210> 2877
 <211> 384
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2877
 atgaaaccca aaccgcacac cgtccgcacc ctgattgccg ccattttcag ccttgccctt 60
 agcggctgcg tcagcgcagt aatcggaagc gccgccgtcg gcgcgaaatc cgccgtcgac 120
 cgccgaacca ccggcgcgca aaccgacgac aacgttatgg cgttgcgat cgaaaccacc 180
 gcccggttct atctgcgcca aaacaaccaa accaaaggct acacgcccc aatctccgtc 240
 gtcggctaca accgccacct gctgctgctc ggacaagtcg ccaccgaagg cgaaaaacag 300
 ttcgtcggtc agattgcacg ttccgaacag gccgccgaag gcgtgtacaa ctatattacc 360
 gtcgcctccc tgccgcgcac tgcc 384

<210> 2878
 <211> 128
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2878
 Met Lys Pro Lys Pro His Thr Val Arg Thr Leu Ile Ala Ala Ile Phe
 1 5 10 15
 Ser Leu Ala Leu Ser Gly Cys Val Ser Ala Val Ile Gly Ser Ala Ala
 20 25 30
 Val Gly Ala Lys Ser Ala Val Asp Arg Arg Thr Thr Gly Ala Gln Thr
 35 40 45
 Asp Asp Asn Val Met Ala Leu Arg Ile Glu Thr Thr Ala Arg Ser Tyr
 50 55 60
 Leu Arg Gln Asn Asn Gln Thr Lys Gly Tyr Thr Pro Gln Ile Ser Val
 65 70 75 80
 Val Gly Tyr Asn Arg His Leu Leu Leu Leu Gly Gln Val Ala Thr Glu

	85		90		95
Gly Glu Lys Gln Phe Val Gly Gln Ile Ala Arg Ser Glu Gln Ala Ala					
	100		105		110
Glu Gly Val Tyr Asn Tyr Ile Thr Val Ala Ser Leu Pro Arg Thr Ala					
	115		120		125

<210> 2879
 <211> 609
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2879
 atgaaaccca aaccgcacac cgtccgcacc ctgactgccg ccgtcctcag ccttgccctc 60
 ggcggtgcg tcagcgcagt cgtcggcggc gcggcggtcg gcgcgaaatc cgccgtcgac 120
 cgccgaacca ccggcgcgca aaccgacgac aacgtaatgg cgctgctat cgaaaccacc 180
 gcccgctcct atctgcgcca aaacaaccaa accaaaggct acacgcccc aatctccgtt 240
 gtcggctaca accgccacct gctgctgctc ggacaagtcg ccaccgaagg cgagaaacag 300
 ttcgtcggtc agattgcacg ttccgaacag gccgccgaag gcgtgtacaa ctacattacc 360
 gtcgcctccc tgccgcgcac tgccggcgac atcgccggcg acacttgga cacaatccaa 420
 gtccgcgcca cgctgttggg catcagcccc gccacacagg cgcgcgtcaa aatcgttacc 480
 tacggcaacg taacctacgt tatgggcac ctcaccccc aagaacaggc gcagattacc 540
 caaaaagtca gcaccaccgt cggcgtacaa aaagtcac cctctacca aaactacgtc 600
 caacgctga 609

<210> 2880
 <211> 202
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2880
 Met Lys Pro Lys Pro His Thr Val Arg Thr Leu Thr Ala Ala Val Leu
 1 5 10 15
 Ser Leu Ala Leu Gly Gly Cys Val Ser Ala Val Val Gly Gly Ala Ala
 20 25 30
 Val Gly Ala Lys Ser Ala Val Asp Arg Arg Thr Thr Gly Ala Gln Thr
 35 40 45
 Asp Asp Asn Val Met Ala Leu Arg Ile Glu Thr Thr Ala Arg Ser Tyr
 50 55 60
 Leu Arg Gln Asn Asn Gln Thr Lys Gly Tyr Thr Pro Gln Ile Ser Val
 65 70 75 80
 Val Gly Tyr Asn Arg His Leu Leu Leu Leu Gly Gln Val Ala Thr Glu
 85 90 95
 Gly Glu Lys Gln Phe Val Gly Gln Ile Ala Arg Ser Glu Gln Ala Ala
 100 105 110

Glu Gly Val Tyr Asn Tyr Ile Thr Val Ala Ser Leu Pro Arg Thr Ala
115 120 125

Gly Asp Ile Ala Gly Asp Thr Trp Asn Thr Ser Lys Val Arg Ala Thr
130 135 140

Leu Leu Gly Ile Ser Pro Ala Thr Gln Ala Arg Val Lys Ile Val Thr
145 150 155 160

Tyr Gly Asn Val Thr Tyr Val Met Gly Ile Leu Thr Pro Glu Glu Gln
165 170 175

Ala Gln Ile Thr Gln Lys Val Ser Thr Thr Val Gly Val Gln Lys Val
180 185 190

Ile Thr Leu Tyr Gln Asn Tyr Val Gln Arg
195 200

<210> 2881

<211> 609

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2881

atgaaaccca aaccacacac cgtccgcacc ctgattgcgc ccgtcctcag ccttgccctc 60
ggcggtctgt tcagcgcagc cgtcggcggg gccgcgcgtc gcgcaaaatc cgtcatcgac 120
cgccgaacca ccggcgcgca aaccgatgac aacgttatgg cgttgcgatc cgaaaccacc 180
gcccgttcct acctgcgcca aaacaaccaa accaaaggct acacgcccc aatctccgtc 240
gtcggctaca accgccacct gctgctgctc ggacaagtcg ccaccgaagg cgaaaaacag 300
ttcgtcggtc agattgcacg ttccgaacag gccgccgaag gcgtatacaa ctacattacc 360
gtcgcctccc tgcgcgcac tgcgggcgac atcgccggcg acacttgga cactgccaaa 420
gtccgcgcca cgtgctggg catcagcccc gctacacagg cgcgcgtcaa aatcattacc 480
tacggcaatg taacctacgt tatgggcatc ctacccccg aagaacaggc gcagattacc 540
caaaaagtca gcaccaccgt cggcgtaaaa aaagtcatta ccctctacca aaactacgtc 600
caacgtctga 609

<210> 2882

<211> 202

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2882

Met Lys Pro Lys Pro His Thr Val Arg Thr Leu Ile Ala Ala Val Leu
1 5 10 15

Ser Leu Ala Leu Gly Gly Cys Phe Ser Ala Val Val Gly Gly Ala Ala
20 25 30

Val Gly Ala Lys Ser Val Ile Asp Arg Arg Thr Thr Gly Ala Gln Thr
35 40 45

Asp Asp Asn Val Met Ala Leu Arg Ile Glu Thr Thr Ala Arg Ser Tyr
50 55 60

Leu Arg Gln Asn Asn Gln Thr Lys Gly Tyr Thr Pro Gln Ile Ser Val
 65 70 75 80
 Val Gly Tyr Asn Arg His Leu Leu Leu Leu Gly Gln Val Ala Thr Glu
 85 90 95
 Gly Glu Lys Gln Phe Val Gly Gln Ile Ala Arg Ser Glu Gln Ala Ala
 100 105 110
 Glu Gly Val Tyr Asn Tyr Ile Thr Val Ala Ser Leu Pro Arg Thr Ala
 115 120 125
 Gly Asp Ile Ala Gly Asp Thr Trp Asn Thr Ser Lys Val Arg Ala Thr
 130 135 140
 Leu Leu Gly Ile Ser Pro Ala Thr Gln Ala Arg Val Lys Ile Ile Thr
 145 150 155 160
 Tyr Gly Asn Val Thr Tyr Val Met Gly Ile Leu Thr Pro Glu Glu Gln
 165 170 175
 Ala Gln Ile Thr Gln Lys Val Ser Thr Thr Val Gly Val Gln Lys Val
 180 185 190
 Ile Thr Leu Tyr Gln Asn Tyr Val Gln Arg
 195 200

<210> 2883
 <211> 609
 <212> DNA
 <213> Neisseria meningitidis

<400> 2883
 atgaaaccca aaccgcacac cgccgcgacc ctgattgccc ccattttcag ccttgcccctt 60
 agcggctgcg tcagcgcagt aatcggaagc gccgccgctcg gcgcgaaatc cgccgctcgac 120
 cgccgaacca cggcgcgca aaccgacgac aacgttatgg cgttgcgat cgaaaccacc 180
 gccggttcct atctgcgcca aaacaaccaa accaaaggct acacgcccc aatctccgtc 240
 gtgggctaca accgccacct gctgctgctc ggacaagtgc ccaccgaagg cgaaaaacag 300
 ttgctcggtc agattgcacg ttccgaacag gccgccgaag gcgtgtacaa ctatattacc 360
 gtgcctccc tgccgcgcac tgccggcgac atcgccggcg aacttgga cacaacaaa 420
 gtccgcgcca cgctgttggg catcagcccc gccacacagg cgcggtcaa aatcgttacc 480
 tacggcaacg taacctacgt tatgggcatc ctcacccccg aagaacaggc gcagattacc 540
 caaaaagtca gcaccaccgt cggcgtaaaa aaagtcac caactacgtc 600
 caacgctga 609

<210> 2884
 <211> 202
 <212> PRT
 <213> Neisseria meningitidis

<400> 2884
 Met Lys Pro Lys Pro His Thr Val Arg Thr Leu Ile Ala Ala Ile Phe
 1 5 10 15
 Ser Leu Ala Leu Ser Gly Cys Val Ser Ala Val Ile Gly Ser Ala Ala

20	25	30
Val Gly Ala Lys Ser Ala Val Asp Arg Arg Thr Thr Gly Ala Gln Thr		
35	40	45
Asp Asp Asn Val Met Ala Leu Arg Ile Glu Thr Thr Ala Arg Ser Tyr		
50	55	60
Leu Arg Gln Asn Asn Gln Thr Lys Gly Tyr Thr Pro Gln Ile Ser Val		
65	70	75
Val Gly Tyr Asn Arg His Leu Leu Leu Leu Gly Gln Val Ala Thr Glu		
85	90	95
Gly Glu Lys Gln Phe Val Gly Gln Ile Ala Arg Ser Glu Gln Ala Ala		
100	105	110
Glu Gly Val Tyr Asn Tyr Ile Thr Val Ala Ser Leu Pro Arg Thr Ala		
115	120	125
Gly Asp Ile Ala Gly Asp Thr Trp Asn Thr Ser Lys Val Arg Ala Thr		
130	135	140
Leu Leu Gly Ile Ser Pro Ala Thr Gln Ala Arg Val Lys Ile Val Thr		
145	150	155
Tyr Gly Asn Val Thr Tyr Val Met Gly Ile Leu Thr Pro Glu Glu Gln		
165	170	175
Ala Gln Ile Thr Gln Lys Val Ser Thr Thr Val Gly Val Gln Lys Val		
180	185	190
Ile Thr Leu Tyr Gln Asn Tyr Val Gln Arg		
195	200	

<210> 2885

<211> 609

<212> DNA

<213> *Neisseria meningitidis*

<400> 2885

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atgaaaccca aaccgcacac cgtccgcacc ctgactgccg ccgtcctcag ccttgccctc 60
ggcgggtgcg tcagcgcagt cgtcggcggc gcggcggtcg gcgcgaaatc cgccgtcgac 120
cgccgaacca ccggcgcgca aaccgacgac aacgtaatgg cgctgcgtat cgaaaccacc 180
gcccgtcctt atctgcgcca aaacaaccaa accaaaggct acacgcccc aatctccgtt 240
gtcggctaca accgccacct gctgctgctc ggacaagtcg ccaccgaagg cgagaaacag 300
ttcgtcggtc agattgcacg ttccgaacag gccgcggaag gcgtgtacaa ctacattacc 360
gtcgccctcc tgccgcgcac tgccggcgac atcgccggcg acacttgaa cacatccaaa 420
gtccgcgcca cgctgttggg catcagcccc gccacacagg cgcgcgtaaa aatcgttacc 480
tacggcaacg taacctacgt tatgggcac ctcaccccc aagaacaggc gcagattacc 540
caaaaagtca gcaccaccgt cggcggtacaa aaagtcacaa ccctctacca aaactacgtc 600
caacgctga                                     609

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<210> 2886

<211> 202

<212> PRT

<213> *Neisseria meningitidis*

<400> 2886

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Met Lys Pro Lys Pro His Thr Val Arg Thr Leu Thr Ala Ala Val Leu
  1              5              10              15

Ser Leu Ala Leu Gly Gly Cys Val Ser Ala Val Val Gly Gly Ala Ala
      20              25              30

Val Gly Ala Lys Ser Ala Val Asp Arg Arg Thr Thr Gly Ala Gln Thr
      35              40              45

Asp Asp Asn Val Met Ala Leu Arg Ile Glu Thr Thr Ala Arg Ser Tyr
      50              55              60

Leu Arg Gln Asn Asn Gln Thr Lys Gly Tyr Thr Pro Gln Ile Ser Val
      65              70              75              80

Val Gly Tyr Asn Arg His Leu Leu Leu Leu Gly Gln Val Ala Thr Glu
      85              90              95

Gly Glu Lys Gln Phe Val Gly Gln Ile Ala Arg Ser Glu Gln Ala Ala
      100             105             110

Glu Gly Val Tyr Asn Tyr Ile Thr Val Ala Ser Leu Pro Arg Thr Ala
      115             120             125

Gly Asp Ile Ala Gly Asp Thr Trp Asn Thr Ser Lys Val Arg Ala Thr
      130             135             140

Leu Leu Gly Ile Ser Pro Ala Thr Gln Ala Arg Val Lys Ile Val Thr
      145             150             155             160

Tyr Gly Asn Val Thr Tyr Val Met Gly Ile Leu Thr Pro Glu Glu Gln
      165             170             175

Ala Gln Ile Thr Gln Lys Val Ser Thr Thr Val Gly Val Gln Lys Val
      180             185             190

Ile Thr Leu Tyr Gln Asn Tyr Val Gln Arg
      195             200
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<210> 2887

<211> 867

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 2887

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atgaaaaata ttctcttagt atttgtagc tttgtgccat tatgtgtccg cactgatctg 60
ccgctgaata tcgaagacat aatgaccgac aagggaatat ggaaactgga aacttccctt 120
acctacctga acagcgaaaa cagccgcgcc gcacttgcct caccggttta cattcagacc 180
ggctccgctt cctttatccc cgtcccgacc gaaattcagg aaaacggcag caataccgat 240
atgctcgccg gcacgctcgg tttgcgttac ggactgaccg gcaataccga catttacggc 300
agcggcagct atctgtggca cgaagaacgc aaactcgacg gcaacggcaa aaccgcgaac 360
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aaacggatgt cgcacatata cgcgcggcatc agccacacct tccttaaaga cggcaaaaat 420
cccgcactca tcgcttttct cgaaagcacg gtttacgaaa aatcgcgcaa caaagcctcg 480
tcgggaaaaat cgtgggtcat cgcgcgccacc acctacaaag ccatagatcc gattgtcctt 540
tccttcaccg ccgcctaccg catcaacggc agcaaaaacc tttcagacga cgtcaaatac 600

aaagcaggca attactggat gctgaatccc aacatctcat ttgccgcca cgacagaatc 660
agcctgaccg gaggcatacca atggctgggc aaacagccc accgcataga cggcaaaaaa 720
gaatccgcaa gaaacacatc cacctacgcc catttcggcg caggtttcgg tttcaccaaa 780
accgcggctt taaacgcata cgcacgtttc aacgtttcag ggcaaagcag ttccgaactg 840
aaattgggcg tacagcatac attttaa 867

<210> 2888

<211> 288

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2888

Met	Lys	Asn	Ile	Leu	Leu	Val	Phe	Val	Ser	Phe	Val	Pro	Leu	Cys	Val
1				5					10					15	
Arg	Thr	Asp	Leu	Pro	Leu	Asn	Ile	Glu	Asp	Ile	Met	Thr	Asp	Lys	Gly
			20					25						30	
Lys	Trp	Lys	Leu	Glu	Thr	Ser	Leu	Thr	Tyr	Leu	Asn	Ser	Glu	Asn	Ser
			35				40						45		
Arg	Ala	Ala	Leu	Ala	Ser	Pro	Val	Tyr	Ile	Gln	Thr	Gly	Ser	Ala	Ser
	50					55					60				
Phe	Ile	Pro	Val	Pro	Thr	Glu	Ile	Gln	Glu	Asn	Gly	Ser	Asn	Thr	Asp
65					70					75					80
Met	Leu	Ala	Gly	Thr	Leu	Gly	Leu	Arg	Tyr	Gly	Leu	Thr	Gly	Asn	Thr
				85					90					95	
Asp	Ile	Tyr	Gly	Ser	Gly	Ser	Tyr	Leu	Trp	His	Glu	Glu	Arg	Lys	Leu
			100					105					110		
Asp	Gly	Asn	Gly	Lys	Thr	Arg	Asn	Lys	Arg	Met	Ser	Asp	Ile	Ser	Ala
		115					120					125			
Gly	Ile	Ser	His	Thr	Phe	Leu	Lys	Asp	Gly	Lys	Asn	Pro	Ala	Leu	Ile
	130					135					140				
Ala	Phe	Leu	Glu	Ser	Thr	Val	Tyr	Glu	Lys	Ser	Arg	Asn	Lys	Ala	Ser
145					150					155				160	
Ser	Gly	Lys	Ser	Trp	Leu	Ile	Gly	Ala	Thr	Thr	Tyr	Lys	Ala	Ile	Asp
				165				170						175	
Pro	Ile	Val	Leu	Ser	Leu	Thr	Ala	Ala	Tyr	Arg	Ile	Asn	Gly	Ser	Lys
		180					185						190		
Thr	Leu	Ser	Asp	Asp	Val	Lys	Tyr	Lys	Ala	Gly	Asn	Tyr	Trp	Met	Leu
		195					200					205			

Asn Pro Asn Ile Ser Phe Ala Ala Asn Asp Arg Ile Ser Leu Thr Gly
210 215 220

Gly Ile Gln Trp Leu Gly Lys Gln Pro Asp Arg Ile Asp Gly Lys Lys
225 230 235 240

Glu Ser Ala Arg Asn Thr Ser Thr Tyr Ala His Phe Gly Ala Gly Phe
245 250 255

Gly Phe Thr Lys Thr Ala Ala Leu Asn Ala Ser Ala Arg Phe Asn Val
260 265 270

Ser Gly Gln Ser Ser Ser Glu Leu Lys Leu Gly Val Gln His Thr Phe
275 280 285

<210> 2889

<211> 870

<212> DNA

<213> Neisseria meningitidis

<400> 2889

atgaagcgca tctttttgcc cgccttgccc gccatcctgc ctttatccac ttatgccgac 60
ctgcccttga cgattgaaga cataatgacc gacaagggaa aatggaaact ggaaacttcc 120
cttacctacc tgaacagcga aaacaaccgc gccgaacttg ccgcaccggt ttacattcaa 180
accggcgcaa cctcgtttat cccatttcgc accgaaatcc aagaaaacgg cagcaatacc 240
gatatgctcg tcggcacgct cggtttgccg tacggactga ccgggaatac cgacatttac 300
ggcagcggca gctatctgtg gcacgaagaa cgcaaacctg acggcaacag caaaaccgcg 360
aacaacggga tgtccgacgt atccctcggc atcagccaca ctttccttaa agacgacaaa 420
aaccgccgcc taatcagctt tcttgaaagc acggtttacg aaaaatcgcg caacaaagcc 480
tcgtcgggaa aatcctggct catcggcgcc accacctaca aagccataga tccgattgtc 540
ctttccctca ccgcgcgcta ccgcatacaac ggcagcaaaa ccctttcaga cggcatccgc 600
tacaaatcgg gcaactacct gctgctcaac cccaacatct catttgctgc caacgacaga 660
atcagcctga ccggaggcat ccaatggctg ggcaggcagc ccgaccggac ggacggcaaa 720
cgggaatcct ccagaaacac atccacctac gccatttcg gcgcagggtt cggtttcacc 780
aaaaccacgg ctttaaacgc atccgcacgt ttcaacgttt cagggcaaag cagttccgaa 840
ctgaaatttg gcgtacagca tacattttaa 870

<210> 2890

<211> 289

<212> PRT

<213> Neisseria meningitidis

<400> 2890

Met Lys Arg Ile Phe Leu Pro Ala Leu Pro Ala Ile Leu Pro Leu Ser
1 5 10 15

Thr Tyr Ala Asp Leu Pro Leu Thr Ile Glu Asp Ile Met Thr Asp Lys
20 25 30

Gly Lys Trp Lys Leu Glu Thr Ser Leu Thr Tyr Leu Asn Ser Glu Asn
35 40 45

Asn Arg Ala Glu Leu Ala Ala Pro Val Tyr Ile Gln Thr Gly Ala Thr
 50 55 60
 Ser Phe Ile Pro Ile Pro Thr Glu Ile Gln Glu Asn Gly Ser Asn Thr
 65 70 75 80
 Asp Met Leu Val Gly Thr Leu Gly Leu Arg Tyr Gly Leu Thr Gly Asn
 85 90 95
 Thr Asp Ile Tyr Gly Ser Gly Ser Tyr Leu Trp His Glu Glu Arg Lys
 100 105 110
 Leu Asp Gly Asn Ser Lys Thr Arg Asn Lys Arg Met Ser Asp Val Ser
 115 120 125
 Leu Gly Ile Ser His Thr Phe Leu Lys Asp Asp Lys Asn Pro Ala Leu
 130 135 140
 Ile Ser Phe Leu Glu Ser Thr Val Tyr Glu Lys Ser Arg Asn Lys Ala
 145 150 155 160
 Ser Ser Gly Lys Ser Trp Leu Ile Gly Ala Thr Thr Tyr Lys Ala Ile
 165 170 175
 Asp Pro Ile Val Leu Ser Leu Thr Ala Ala Tyr Arg Ile Asn Gly Ser
 180 185 190
 Lys Thr Leu Ser Asp Gly Ile Arg Tyr Lys Ser Gly Asn Tyr Leu Leu
 195 200 205
 Leu Asn Pro Asn Ile Ser Phe Ala Ala Asn Asp Arg Ile Ser Leu Thr
 210 215 220
 Gly Gly Ile Gln Trp Leu Gly Arg Gln Pro Asp Arg Thr Asp Gly Lys
 225 230 235 240
 Arg Glu Ser Ser Arg Asn Thr Ser Thr Tyr Ala His Phe Gly Ala Gly
 245 250 255
 Phe Gly Phe Thr Lys Thr Thr Ala Leu Asn Ala Ser Ala Arg Phe Asn
 260 265 270
 Val Ser Gly Gln Ser Ser Ser Glu Leu Lys Phe Gly Val Gln His Thr
 275 280 285
 Phe

<210> 2891

<211> 870

<212> DNA

<213> *Neisseria meningitidis*

<400> 2891

atgaagcgca tctttttgcc cgccttgccc gccatcctgc ctttatccgc ttaatgccgac 60
 ctgcccttga cgattgaaga cataatgacc gacaagggca aatggaaact ggaaacttcc 120

```

cttacctacc tgaacagcga aaacaaccgc gccgaacttg ccgcaccggt ttacatccaa 180
accggcgcaa cctcgtttat ccccatctcg accgaaatcc aagaaaacgg cagcaatacc 240
gatatgctcg ttggcacgct cggtttgcg tacggactga ccgggaatac cgacatttac 300
ggcagcggca gctatctgtg gcacgaagaa cgcaaaactcg acggcaacgg caaaacccga 360
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aaccgccgcc taatcagctt tcttgaaagc acggtttacg aaaaatcgcg caacaaagcc 480
tcgtcgggaa aatcctggct catcggcgcc accacctaca aagccatcga ccccgtcgtc 540
ctctcattga ccgctgccta ccgtatcaac ggcagcaaaa ccctttcaag caacaccaaa 600
tacaagcag gcaattactg gatgctgaat cccaatatat ccttcgccgc caacgacaga 660
atcagcctca cgggcggcat ccaatggctg ggcaagcagc ccgaccgtct ggacggcaaa 720
aaagaatccg caagaaacac atccacctat gccatttcg gcgcagggtt cggtttcacc 780
aaaaccacgg ctttaaacgc atccgcacgt ttcaacggtt cagggcaaag cagttccgaa 840
ctgaaatttg gcgtacagca tacgttttaa 870

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<210> 2892

<211> 289

<212> PRT

<213> Neisseria meningitidis

<400> 2892

```

Met Lys Arg Ile Phe Leu Pro Ala Leu Pro Ala Ile Leu Pro Leu Ser
  1             5             10             15

```

```

Ala Tyr Ala Asp Leu Pro Leu Thr Ile Glu Asp Ile Met Thr Asp Lys
          20             25             30

```

```

Gly Lys Trp Lys Leu Glu Thr Ser Leu Thr Tyr Leu Asn Ser Glu Asn
          35             40             45

```

```

Asn Arg Ala Glu Leu Ala Ala Pro Val Tyr Ile Gln Thr Gly Ala Thr
          50             55             60

```

```

Ser Phe Ile Pro Ile Pro Thr Glu Ile Gln Glu Asn Gly Ser Asn Thr
          65             70             75             80

```

```

Asp Met Leu Val Gly Thr Leu Gly Leu Arg Tyr Gly Leu Thr Gly Asn
          85             90             95

```

```

Thr Asp Ile Tyr Gly Ser Gly Ser Tyr Leu Trp His Glu Glu Arg Lys
          100            105            110

```

```

Leu Asp Gly Asn Gly Lys Thr Arg Asn Lys Arg Met Ser Asp Val Ser
          115            120            125

```

```

Leu Gly Ile Ser His Thr Phe Leu Lys Asp Asp Lys Asn Pro Ala Leu
          130            135            140

```

```

Ile Ser Phe Leu Glu Ser Thr Val Tyr Glu Lys Ser Arg Asn Lys Ala
          145            150            155            160

```

```

Ser Ser Gly Lys Ser Trp Leu Ile Gly Ala Thr Thr Tyr Lys Ala Ile
          165            170            175

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```

Asp Pro Val Val Leu Ser Leu Thr Ala Ala Tyr Arg Ile Asn Gly Ser
          180            185            190

```

Lys Thr Leu Ser Ser Asn Thr Lys Tyr Lys Ala Gly Asn Tyr Trp Met
 195 200 205

Leu Asn Pro Asn Ile Ser Phe Ala Ala Asn Asp Arg Ile Ser Leu Thr
 210 215 220

Gly Gly Ile Gln Trp Leu Gly Lys Gln Pro Asp Arg Leu Asp Gly Lys
 225 230 235 240

Lys Glu Ser Ala Arg Asn Thr Ser Thr Tyr Ala His Phe Gly Ala Gly
 245 250 255

Phe Gly Phe Thr Lys Thr Thr Ala Leu Asn Ala Ser Ala Arg Phe Asn
 260 265 270

Val Ser Gly Gln Ser Ser Ser Glu Leu Lys Phe Gly Val Gln His Thr
 275 280 285

Phe

<210> 2893

<211> 222

<212> DNA

<213> Neisseria meningitidis

<400> 2893

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 aaagcagacg tggaaaaagg caaacagggt gccgcaacgg tttgtgcggc ttgccatgca 120
 gcagacggta acagcggcat tgcgatgtat ccgcgtttgg cggcacagca tactgcttac 180
 atctatcatc aaactatcgg catccgcgac gtaaaccgac cc 222

<210> 2894

<211> 74

<212> PRT

<213> Neisseria meningitidis

<400> 2894

Met Lys Arg Leu Thr Leu Leu Ala Phe Val Leu Ala Ala Gly Ala Val
 1 5 10 15

Ser Ala Ser Pro Lys Ala Asp Val Glu Lys Gly Lys Gln Val Ala Ala
 20 25 30

Thr Val Cys Ala Ala Cys His Ala Ala Asp Gly Asn Ser Gly Ile Ala
 35 40 45

Met Tyr Pro Arg Leu Ala Ala Gln His Thr Ala Tyr Ile Tyr His Gln
 50 55 60

Thr Ile Gly Ile Arg Asp Val Asn Ala Pro
 65 70

<210> 2895

<211> 624

<212> DNA

<213> *Neisseria meningitidis*

<400> 2895

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gcagacggta acagcggcat tgcgatgtat ccgcgtttgg cggcacagca tactgcttac 180
atctatcatc aaaccatcgg catccgcgac ggtaaacgca cccacgggtc ggcagctgtg 240
atgaaaccgg tggtaatgaa tttgagcgat caggatattt tgaacgtatc cgcattctat 300
gccaaacagc agcccaaatc cggatgaagcc aatcctaagg aaaatcccga attgggtgcg 360
aaaatctatc gcggcgggtt gagcgataaa aaagtgccgg cgtgtatgtc ctgccacggc 420
ccgagcgggtg cgggtatgcc gggggcgga agcgaaattc aggccttatcc gcgtttgggc 480
ggtcagcatc aggcataat tgttgaacag atgaatgcct acaagtcggg tcagcgtaaa 540
aataccatca tggaagatat tgcaaaccgt atgtctgaag aagatttgaa agcggtcgcc 600
aactttatcc aaggtttgcg ttaa                                     624
```

<210> 2896

<211> 207

<212> PRT

<213> *Neisseria meningitidis*

<400> 2896

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Met Lys Arg Leu Thr Leu Leu Ala Phe Val Leu Ala Ala Gly Ala Val
  1                      5                      10                     15

Ser Ala Ser Pro Lys Ala Asp Val Glu Lys Gly Lys Gln Val Ala Ala
      20                      25                     30

Thr Val Cys Ala Ala Cys His Ala Ala Asp Gly Asn Ser Gly Ile Ala
      35                      40                     45

Met Tyr Pro Arg Leu Ala Ala Gln His Thr Ala Tyr Ile Tyr His Gln
      50                      55                     60

Thr Ile Gly Ile Arg Asp Gly Lys Arg Thr His Gly Ser Ala Ala Val
      65                      70                     75                     80

Met Lys Pro Val Val Met Asn Leu Ser Asp Gln Asp Ile Leu Asn Val
      85                      90                     95

Ser Ala Phe Tyr Ala Lys Gln Gln Pro Lys Ser Gly Glu Ala Asn Pro
      100                     105                    110

Lys Glu Asn Pro Glu Leu Gly Ala Lys Ile Tyr Arg Gly Gly Leu Ser
      115                     120                    125

Asp Lys Lys Val Pro Ala Cys Met Ser Cys His Gly Pro Ser Gly Ala
      130                     135                    140

Gly Met Pro Gly Gly Gly Ser Glu Ile Gln Ala Tyr Pro Arg Leu Gly
      145                     150                    155                    160

Gly Gln His Gln Ala Tyr Ile Val Glu Gln Met Asn Ala Tyr Lys Ser
      165                     170                    175
```

Gly Gln Arg Lys Asn Thr Ile Met Glu Asp Ile Ala Asn Arg Met Ser
 180 185 190

Glu Glu Asp Leu Lys Ala Val Ala Asn Phe Ile Gln Gly Leu Arg
 195 200 205

<210> 2897

<211> 339

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2897

atgaacaaaa atattgctgc cgcactcgcc ggtgctttat ccctgtctct ggccgcccgc 60
 gccgttgccg ccacaaaacc ggcaagcaac gcaacaggcg ttcaaaaatc cgcccaaggc 120
 tcttgccgcg catccaaatc tgccgaaggt tcgtgcggcg catccaaatc tgccgaaggt 180
 tcgtgcggcg cggtgcttc taaagcaggc gaaggcaaat gcggcgaggg caaatgcggt 240
 gcaactgtaa aaaaagccca caaacacacc aaagcatcta aagccaaagc caaatctgcc 300
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<210> 2898

<211> 112

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2898

Met Asn Lys Asn Ile Ala Ala Ala Leu Ala Gly Ala Leu Ser Leu Ser
 1 5 10 15

Leu Ala Ala Gly Ala Val Ala Ala His Lys Pro Ala Ser Asn Ala Thr
 20 25 30

Gly Val Gln Lys Ser Ala Gln Gly Ser Cys Gly Ala Ser Lys Ser Ala
 35 40 45

Glu Gly Ser Cys Gly Ala Ser Lys Ser Ala Glu Gly Ser Cys Gly Ala
 50 55 60

Ala Ala Ser Lys Ala Gly Glu Gly Lys Cys Gly Glu Gly Lys Cys Gly
 65 70 75 80

Ala Thr Val Lys Lys Ala His Lys His Thr Lys Ala Ser Lys Ala Lys
 85 90 95

Ala Lys Ser Ala Glu Gly Lys Cys Gly Glu Gly Lys Cys Gly Ser Lys
 100 105 110

<210> 2899

<211> 309

<212> DNA

<213> Neisseria meningitidis

<400> 2899
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gcagttgctg ccaacaaacc ggcaagcaac gcaacaggcg ttcataaatc cgcccatggc 120
tcttgccggc cgtccaaatc tgccgaaggt tcgtgcggcg cggctggttc taaagcaggc 180
gaaggcaaat gcggcgaggg caaatgcggt gcgaccgtaa aaaaaacca caaacacacc 240
aaagcatcta aagccaaggc caaatctgcc gaaggcaaat gcggcgaagg caaatgcggt 300
tctaaataa 309

<210> 2900
<211> 102
<212> PRT
<213> Neisseria meningitidis

<400> 2900
Met Asn Lys Asn Ile Ala Ala Ala Leu Ala Gly Ala Leu Ser Leu Ser
1 5 10 15
Leu Ala Ala Gly Ala Val Ala Ala Asn Lys Pro Ala Ser Asn Ala Thr
20 25 30
Gly Val His Lys Ser Ala His Gly Ser Cys Gly Ala Ser Lys Ser Ala
35 40 45
Glu Gly Ser Cys Gly Ala Ala Gly Ser Lys Ala Gly Glu Gly Lys Cys
50 55 60
Gly Glu Gly Lys Cys Gly Ala Thr Val Lys Lys Thr His Lys His Thr
65 70 75 80
Lys Ala Ser Lys Ala Lys Ala Lys Ser Ala Glu Gly Lys Cys Gly Glu
85 90 95
Gly Lys Cys Gly Ser Lys
100

<210> 2901
<211> 309
<212> DNA
<213> Neisseria meningitidis

<400> 2901
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gcagttgctg ccaacaaacc ggcaagcaac gcaacaggcg ttcataaatc cgcccatggc 120
tcttgccggc cgtccaaatc tgccgaaggt tcgtgcggcg cggctggttc taaagcaggc 180
gaaggcaaat gcggcgaggg caaatgcggt gcgaccgtaa aaaaaacca caaacacacc 240
aaagcatcta aagccaaggc caaatctgcc gaaggcaaat gcggcgaagg caaatgcggt 300
tctaaataa 309

<210> 2902
<211> 102
<212> PRT
<213> Neisseria meningitidis

<400> 2902

Met Asn Lys Asn Ile Ala Ala Ala Leu Ala Gly Ala Leu Ser Leu Ser
 1 5 10 15
 Leu Ala Ala Gly Ala Val Ala Ala Asn Lys Pro Ala Ser Asn Ala Thr
 20 25 30
 Gly Val His Lys Ser Ala His Gly Ser Cys Gly Ala Ser Lys Ser Ala
 35 40 45
 Glu Gly Ser Cys Gly Ala Ala Gly Ser Lys Ala Gly Glu Gly Lys Cys
 50 55 60
 Gly Glu Gly Lys Cys Gly Ala Thr Val Lys Lys Thr His Lys His Thr
 65 70 75 80
 Lys Ala Ser Lys Ala Lys Ala Lys Ser Ala Glu Gly Lys Cys Gly Glu
 85 90 95
 Gly Lys Cys Gly Ser Lys
 100

<210> 2903
 <211> 1845
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2903
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 ttaaggaaac atcggcggtta cagcgaggaa gaaatcaaaa acgaacgcgc acggcttgccg 180
 gcagtgggcg aacgggtcaa cagggtgttt acgctgttgg gcggtgaaac ggctttgcag 240
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 cccgaagtgc ccgaacgcgc cttggaatg gccgtgtcgc tgaacgcgtt tgaacaggcg 360
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 gccgcctgac agcagggtgg ggtggctcaa aaagcatcga aagcggttcg ccgtgcggcg 600
 ttgaagtatg aacatctgcc cgaagcggcg gttgccgatg cgggtgttcg cgtacaggga 660
 cgcgaaaagg aaaaggcaat cgaagctttg cagcgtttgg cgaagctcga tacggaaata 720
 ttgcccccca ctttaatgac gttgcgtctg actgcacgca aatatcccga aatactcgac 780
 ggcttttttcg agcagacaga caccctaaac ctttcggccg tctggcagga aatggaatt 840
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 gaacacaacc cgaatgcaaa cctgtatatt caggcggcga tattggcggc aaaccgaaaa 960
 gaaggtgcgt ccgttatcga cggctacgcc gaaaaggcat acggcagggg gacgggggaa 1020
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 atacagatgc tcgccctgtc gaagctgcc gacaaaacggg aagccctgat cgggctgaac 1320
 aacatcatcg ccaaaacttc ggcgccggga agcacggaac ctttggcggga agcattggca 1380
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 ctttccgatt ccaaactgtt ggacgagggt ttccgccctg ttcagacggc ataccaaatc 1560
 aaccgggacg ataccgccgt taacgacagc ataggctggg cgtattacct gaaaggcgac 1620
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tggacgcagg cggcacacct taggggagac aagaaaatat ggcgggagac gctcaaacgc 1800
 tacggaatcg ccttgcccga gccttcccga aaaccccgga aataa 1845

<210> 2904
 <211> 614
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 2904
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 20 25 30
 Leu Pro Lys Glu Val Gly Lys Val Leu Arg Lys His Arg Arg Tyr Ser
 35 40 45
 Glu Glu Glu Ile Lys Asn Glu Arg Ala Arg Leu Ala Ala Val Gly Glu
 50 55 60
 Arg Val Asn Arg Val Phe Thr Leu Leu Gly Gly Glu Thr Ala Leu Gln
 65 70 75 80
 Lys Gly Gln Ala Gly Thr Ala Leu Ala Thr Tyr Met Leu Met Leu Glu
 85 90 95
 Arg Thr Lys Ser Pro Glu Val Ala Glu Arg Ala Leu Glu Met Ala Val
 100 105 110
 Ser Leu Asn Ala Phe Glu Gln Ala Glu Met Ile Tyr Gln Lys Trp Arg
 115 120 125
 Gln Ile Glu Pro Ile Pro Gly Glu Ala Gln Lys Arg Ala Gly Trp Leu
 130 135 140
 Arg Asn Val Leu Arg Glu Gly Gly Asn Gln His Leu Asp Gly Leu Glu
 145 150 155 160
 Glu Val Leu Ala Gln Ser Asp Asp Val Gln Lys Arg Arg Ile Phe Leu
 165 170 175
 Leu Leu Val Gln Ala Ala Val Gln Gln Gly Gly Val Ala Gln Lys Ala
 180 185 190
 Ser Lys Ala Val Arg Arg Ala Ala Leu Lys Tyr Glu His Leu Pro Glu
 195 200 205
 Ala Ala Val Ala Asp Ala Val Phe Gly Val Gln Gly Arg Glu Lys Glu
 210 215 220
 Lys Ala Ile Glu Ala Leu Gln Arg Leu Ala Lys Leu Asp Thr Glu Ile
 225 230 235 240
 Leu Pro Pro Thr Leu Met Thr Leu Arg Leu Thr Ala Arg Lys Tyr Pro
 245 250 255

Glu Ile Leu Asp Gly Phe Phe Glu Gln Thr Asp Thr Gln Asn Leu Ser
 260 265 270
 Ala Val Trp Gln Glu Met Glu Ile Met Asn Leu Val Ser Leu Arg Lys
 275 280 285
 Pro Asp Asp Ala Tyr Ala Arg Leu Asn Val Leu Leu Glu His Asn Pro
 290 295 300
 Asn Ala Asn Leu Tyr Ile Gln Ala Ala Ile Leu Ala Ala Asn Arg Lys
 305 310 315 320
 Glu Gly Ala Ser Val Ile Asp Gly Tyr Ala Glu Lys Ala Tyr Gly Arg
 325 330 335
 Gly Thr Gly Glu Gln Arg Gly Arg Ala Ala Met Thr Ala Ala Met Ile
 340 345 350
 Tyr Ala Asp Arg Arg Asp Tyr Ala Lys Val Arg Gln Trp Leu Lys Lys
 355 360 365
 Val Ser Ala Pro Glu Tyr Leu Phe Asp Lys Gly Val Leu Ala Ala Ala
 370 375 380
 Ala Ala Ala Glu Leu Asp Gly Gly Arg Ala Ala Leu Arg Gln Ile Gly
 385 390 395 400
 Arg Val Arg Lys Leu Pro Glu Gln Gln Gly Arg Tyr Phe Thr Ala Asp
 405 410 415
 Asn Leu Ser Lys Ile Gln Met Leu Ala Leu Ser Lys Leu Pro Asp Lys
 420 425 430
 Arg Glu Ala Leu Ile Gly Leu Asn Asn Ile Ile Ala Lys Leu Ser Ala
 435 440 445
 Ala Gly Ser Thr Glu Pro Leu Ala Glu Ala Leu Ala Gln Arg Ser Ile
 450 455 460
 Ile Tyr Glu Gln Phe Gly Lys Arg Gly Lys Met Ile Ala Asp Leu Glu
 465 470 475 480
 Thr Ala Leu Lys Leu Thr Pro Asp Asn Ala Gln Ile Met Asn Asn Leu
 485 490 495
 Gly Tyr Ser Leu Leu Ser Asp Ser Lys Arg Leu Asp Glu Gly Phe Ala
 500 505 510
 Leu Leu Gln Thr Ala Tyr Gln Ile Asn Pro Asp Asp Thr Ala Val Asn
 515 520 525
 Asp Ser Ile Gly Trp Ala Tyr Tyr Leu Lys Gly Asp Ala Glu Ser Ala
 530 535 540
 Leu Pro Tyr Leu Arg Tyr Ser Phe Glu Asn Asp Pro Glu Pro Glu Val
 545 550 555 560

Ala Ala His Leu Gly Glu Val Leu Trp Ala Leu Gly Glu Arg Asp Gln
565 570 575

Ala Val Asp Val Trp Thr Gln Ala Ala His Leu Arg Gly Asp Lys Lys
580 585 590

Ile Trp Arg Glu Thr Leu Lys Arg Tyr Gly Ile Ala Leu Pro Glu Pro
595 600 605

Ser Arg Lys Pro Arg Lys
610

<210> 2905

<211> 1851

<212> DNA

<213> *Neisseria meningitidis*

<400> 2905

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ggacaggtat ctgccgccgg aggcggtgcg ggggatatga aacagccgaa ggaagtgcga 120
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gcacaagccg ccgtgcaaca ggacgggttg gcgcaaaaag catcgaaaag ggttcgccgc 600
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gacgtatgga cgcaggcggc acaccttacg gagacaaga aaatatggcg ggaaacgctc 1800
aaacgtcacg gcatcgcat gcccacaact tcccgaaaac ctcgaaata a 1851
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<210> 2906

<211> 616

<212> PRT

<213> *Neisseria meningitidis*

<400> 2906

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Thr	Leu	Ile	Ala	Gly	Gln	Val	Ser	Ala	Ala	Gly	Gly	Gly	Ala	Gly	Asp
			20					25					30		
Met	Lys	Gln	Pro	Lys	Glu	Val	Gly	Lys	Val	Phe	Arg	Lys	Gln	Gln	Arg
		35					40					45			
Tyr	Ser	Glu	Glu	Glu	Ile	Lys	Asn	Glu	Arg	Ala	Arg	Leu	Ala	Ala	Val
	50					55					60				
Gly	Glu	Arg	Val	Asn	Gln	Ile	Phe	Thr	Leu	Leu	Gly	Gly	Glu	Thr	Ala
65					70					75					80
Leu	Gln	Lys	Gly	Gln	Ala	Gly	Thr	Ala	Leu	Ala	Thr	Tyr	Met	Leu	Met
				85					90					95	
Leu	Glu	Arg	Thr	Lys	Ser	Pro	Glu	Val	Ala	Glu	Arg	Ala	Leu	Glu	Met
			100					105					110		
Ala	Val	Ser	Leu	Asn	Ala	Phe	Glu	Gln	Ala	Glu	Met	Ile	Tyr	Gln	Lys
		115					120					125			
Trp	Arg	Gln	Ile	Glu	Pro	Ile	Pro	Gly	Lys	Ala	Gln	Lys	Arg	Ala	Gly
	130					135					140				
Trp	Leu	Arg	Asn	Val	Leu	Arg	Glu	Arg	Gly	Asn	Gln	His	Leu	Asp	Gly
145				150						155					160
Leu	Glu	Glu	Val	Leu	Ala	Gln	Ala	Asp	Glu	Gly	Gln	Asn	Arg	Arg	Val
			165						170					175	
Phe	Leu	Leu	Leu	Ala	Gln	Ala	Ala	Val	Gln	Gln	Asp	Gly	Leu	Ala	Gln
			180					185					190		
Lys	Ala	Ser	Lys	Ala	Val	Arg	Arg	Ala	Ala	Leu	Lys	Tyr	Glu	His	Leu
		195					200					205			
Pro	Glu	Ala	Ala	Val	Ala	Asp	Val	Val	Phe	Ser	Val	Gln	Gly	Arg	Glu
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Lys	Glu	Lys	Ala	Ile	Gly	Ala	Leu	Gln	Arg	Leu	Ala	Lys	Leu	Asp	Thr
225					230					235					240
Glu	Ile	Leu	Pro	Pro	Thr	Leu	Met	Thr	Leu	Arg	Leu	Thr	Ala	Arg	Lys
			245						250					255	
Tyr	Pro	Glu	Ile	Leu	Asp	Gly	Phe	Phe	Glu	Gln	Thr	Asp	Thr	Gln	Asn
			260				265						270		
Leu	Ser	Ala	Val	Trp	Gln	Glu	Met	Glu	Ile	Met	Asn	Leu	Val	Ser	Leu
		275					280					285			
His	Arg	Leu	Asp	Asp	Ala	Tyr	Ala	Arg	Leu	Asn	Val	Leu	Leu	Glu	Arg

290	295	300
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305	310	315 320
Arg Lys Glu Gly Ala Ser Val Ile Asp Gly Tyr Ala Glu Lys Ala Tyr		
	325	330 335
Gly Arg Gly Thr Glu Glu Gln Arg Ser Arg Ala Ala Leu Thr Ala Ala		
	340	345 350
Met Met Tyr Ala Asp Arg Arg Asp Tyr Ala Lys Val Arg Gln Trp Leu		
	355	360 365
Lys Lys Val Ser Ala Pro Glu Tyr Leu Phe Asp Lys Gly Val Leu Ala		
	370	375 380
Ala Ala Ala Ala Val Glu Leu Asp Gly Gly Arg Ala Ala Leu Arg Gln		
385	390	395 400
Ile Gly Arg Val Arg Lys Leu Pro Glu Gln Gln Gly Arg Tyr Phe Thr		
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Ala Asp Asn Leu Ser Lys Ile Gln Met Leu Ala Leu Ser Lys Leu Pro		
	420	425 430
Asp Lys Arg Glu Ala Leu Arg Gly Leu Asp Lys Ile Ile Glu Lys Pro		
	435	440 445
Pro Ala Gly Ser Asn Thr Glu Leu Gln Ala Glu Ala Leu Val Gln Arg		
	450	455 460
Ser Val Val Tyr Asp Arg Leu Gly Lys Arg Lys Lys Met Ile Ser Asp		
465	470	475 480
Leu Glu Arg Ala Phe Arg Leu Ala Pro Asp Asn Ala Gln Ile Met Asn		
	485	490 495
Asn Leu Gly Tyr Ser Leu Leu Thr Asp Ser Lys Arg Leu Asp Glu Gly		
	500	505 510
Phe Ala Leu Leu Gln Thr Ala Tyr Gln Ile Asn Pro Asp Asp Thr Ala		
	515	520 525
Val Asn Asp Ser Ile Gly Trp Ala Tyr Tyr Leu Lys Gly Asp Ala Glu		
	530	535 540
Ser Ala Leu Pro Tyr Leu Arg Tyr Ser Phe Glu Asn Asp Pro Glu Pro		
545	550	555 560
Glu Val Ala Ala His Leu Gly Glu Val Leu Trp Ala Leu Gly Glu Arg		
	565	570 575
Asp Gln Ala Val Asp Val Trp Thr Gln Ala Ala His Leu Thr Gly Asp		
	580	585 590
Lys Lys Ile Trp Arg Glu Thr Leu Lys Arg His Gly Ile Ala Leu Pro		

595

600

605

Gln Pro Ser Arg Lys Pro Arg Lys
610 615

<210> 2907

<211> 1839

<212> DNA

<213> *Neisseria meningitidis*

<400> 2907

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<210> 2908

<211> 612

<212> PRT

<213> *Neisseria meningitidis*

<400> 2908

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Leu Ala Gly Gln Ala Tyr Ala Ala Gly Ala Ala Asp Ala Lys Pro Pro
20 25 30

Lys	Glu	Val	Gly	Lys	Val	Phe	Arg	Lys	Gln	Gln	Arg	Tyr	Ser	Glu	Glu	
35						40						45				
Glu	Ile	Lys	Asn	Glu	Arg	Ala	Arg	Leu	Ala	Ala	Val	Gly	Glu	Arg	Val	
50						55						60				
Asn	Gln	Ile	Phe	Thr	Leu	Leu	Gly	Gly	Glu	Thr	Ala	Leu	Gln	Lys	Gly	
65						70				75				80		
Gln	Ala	Gly	Thr	Ala	Leu	Ala	Thr	Tyr	Met	Leu	Met	Leu	Glu	Arg	Thr	
			85						90						95	
Lys	Ser	Pro	Glu	Val	Ala	Glu	Arg	Ala	Leu	Glu	Met	Ala	Val	Ser	Leu	
			100						105						110	
Asn	Ala	Phe	Glu	Gln	Ala	Glu	Met	Ile	Tyr	Gln	Lys	Trp	Arg	Gln	Ile	
115						120				125				130		
Glu	Pro	Ile	Pro	Gly	Lys	Ala	Gln	Lys	Arg	Ala	Gly	Trp	Leu	Arg	Asn	
130						135				140				145		
Val	Leu	Arg	Glu	Arg	Gly	Asn	Gln	His	Leu	Asp	Gly	Leu	Glu	Glu	Val	
145						150				155				160		
Leu	Ala	Gln	Ala	Asp	Glu	Gly	Gln	Asn	Arg	Arg	Val	Phe	Leu	Leu	Leu	
			165						170						175	
Ala	Gln	Ala	Ala	Val	Gln	Gln	Asp	Gly	Leu	Ala	Gln	Lys	Ala	Ser	Lys	
180						185						190				
Ala	Val	Arg	Arg	Ala	Ala	Leu	Arg	Tyr	Glu	His	Leu	Pro	Glu	Ala	Ala	
195						200				205				210		
Val	Ala	Asp	Val	Val	Phe	Ser	Val	Gln	Gly	Arg	Glu	Lys	Glu	Lys	Ala	
210						215				220				225		
Ile	Gly	Ala	Leu	Gln	Arg	Leu	Ala	Lys	Leu	Asp	Thr	Glu	Ile	Leu	Pro	
225				230				235				240		245		
Pro	Thr	Leu	Met	Thr	Leu	Arg	Leu	Thr	Ala	Arg	Lys	Tyr	Pro	Glu	Ile	
			245						250						255	
Leu	Asp	Gly	Phe	Phe	Glu	Gln	Thr	Asp	Thr	Gln	Asn	Leu	Ser	Ala	Val	
			260						265						270	
Trp	Gln	Glu	Met	Glu	Ile	Met	Asn	Leu	Val	Ser	Leu	His	Arg	Leu	Asp	
275						280				285				290		
Asp	Ala	Tyr	Ala	Arg	Leu	Asn	Val	Leu	Leu	Glu	Arg	Asn	Pro	Asn	Ala	
290						295				300				305		
Asp	Leu	Tyr	Ile	Gln	Ala	Ala	Ile	Leu	Ala	Ala	Asn	Arg	Lys	Glu	Gly	
305				310				315				320		325		
Ala	Ser	Val	Ile	Asp	Gly	Tyr	Ala	Glu	Lys	Ala	Tyr	Gly	Arg	Gly	Thr	
			325						330						335	

Gly Glu Gln Arg Gly Arg Ala Ala Met Thr Ala Ala Met Ile Tyr Ala
 340 345 350

Asp Arg Arg Asp Tyr Thr Lys Val Arg Gln Trp Leu Lys Lys Val Ser
 355 360 365

Ala Pro Glu Tyr Leu Phe Asp Lys Gly Val Leu Ala Ala Ala Ala Ala
 370 375 380

Val Glu Leu Asp Gly Gly Arg Ala Ala Leu Arg Gln Ile Gly Arg Val
 385 390 395 400

Arg Lys Leu Pro Glu Gln Gln Gly Arg Tyr Phe Thr Ala Asp Asn Leu
 405 410 415

Ser Lys Ile Gln Met Phe Ala Leu Ser Lys Leu Pro Asp Lys Arg Glu
 420 425 430

Ala Leu Arg Gly Leu Asp Lys Ile Ile Glu Lys Pro Pro Ala Gly Ser
 435 440 445

Asn Thr Glu Leu Gln Ala Glu Ala Leu Val Gln Arg Ser Val Val Tyr
 450 455 460

Asp Arg Leu Gly Lys Arg Lys Lys Met Ile Ser Asp Leu Glu Arg Ala
 465 470 475 480

Phe Arg Leu Ala Pro Asp Asn Ala Gln Ile Met Asn Asn Leu Gly Tyr
 485 490 495

Ser Leu Leu Ser Asp Ser Lys Arg Leu Asp Glu Gly Phe Ala Leu Leu
 500 505 510

Gln Thr Ala Tyr Gln Ile Asn Pro Asp Asp Thr Ala Val Asn Asp Ser
 515 520 525

Ile Gly Trp Ala Tyr Tyr Leu Lys Gly Asp Ala Glu Ser Ala Leu Pro
 530 535 540

Tyr Leu Arg Tyr Ser Phe Glu Asn Asp Pro Glu Pro Glu Val Ala Ala
 545 550 555 560

His Leu Gly Glu Val Leu Trp Ala Leu Gly Glu Arg Asp Gln Ala Val
 565 570 575

Asp Val Trp Thr Gln Ala Ala His Leu Thr Gly Asp Lys Lys Ile Trp
 580 585 590

Arg Glu Thr Leu Lys Arg His Gly Ile Ala Leu Pro Gln Pro Ser Arg
 595 600 605

Lys Pro Arg Lys
 610

<210> 2909
 <211> 609
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2909
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 atgcggcgca ttatgcccga tttgggtttt gaggcgaaag gctatgccct gtctttcgaa 300
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<210> 2910
 <211> 202
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2910
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 20 25 30
 Asn Ile Val Lys Gln Asp Leu Asp Phe Ser Cys Gly Ala Ala Ser Val
 35 40 45
 Ala Thr Leu Leu Asn Asn Phe Tyr Gly Gln Lys Leu Thr Glu Glu Glu
 50 55 60
 Val Leu Glu Lys Leu Gly Lys Glu Gln Met Arg Ala Ser Phe Glu Asp
 65 70 75 80
 Met Arg Arg Ile Met Pro Asp Leu Gly Phe Glu Ala Lys Gly Tyr Ala
 85 90 95
 Leu Ser Phe Glu Gln Leu Ala Gln Leu Lys Ile Pro Val Ile Val Tyr
 100 105 110
 Leu Lys Tyr Arg Lys Asp Asp His Phe Ser Val Leu Arg Gly Val Asp
 115 120 125
 Gly Asn Thr Val Leu Leu Ala Asp Pro Ser Pro Gly His Val Ser Met
 130 135 140
 Ser Arg Ala Gln Phe Leu Glu Ala Trp Gln Thr Arg Glu Gly Asn Leu
 145 150 155 160
 Ala Gly Lys Ile Leu Ala Val Val Pro Lys Lys Ala Glu Ala Ile Ser
 165 170 175

Asn Lys Leu Phe Phe Thr His His Pro Lys Arg Gln Thr Glu Phe Ala
180 185 190

Val Gly Gln Val Lys Trp Trp Arg Ala Tyr
195 200

<210> 2911

<211> 657

<212> DNA

<213> Neisseria meningitidis

<400> 2911

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agtttgaaag cgcggcggga tttcaatatt gtaaagcagg atttgattt ttcctgtggg 180
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ttggctgtca taccgaaaaa agccgagaca atttcaaata aattgtttt cacaacaac 600
ccaaaacggc agacggagtt tacagtcgga caaatcaggc aagcacgtgc agagtaa 657

<210> 2912

<211> 218

<212> PRT

<213> Neisseria meningitidis

<400> 2912

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Leu Ser Tyr Arg Leu Asn Ala Ala Pro Met Phe Asn Asp Asn Pro Val
20 25 30

Val Tyr Gly Lys Ile Lys Val Gln Ser Trp Lys Ala Arg Arg Asp Phe
35 40 45

Asn Ile Val Lys Gln Asp Leu Asp Phe Ser Cys Gly Ala Ala Ser Val
50 55 60

Ala Thr Leu Leu Asn Asn Phe Tyr Gly Gln Thr Leu Thr Glu Glu Glu
65 70 75 80

Val Leu Lys Lys Leu Asp Lys Glu Gln Met Arg Ala Ser Phe Glu Asp
85 90 95

Met Arg Arg Ile Met Pro Asp Leu Gly Phe Glu Ala Lys Gly Tyr Ala
100 105 110

Leu Ser Phe Glu Gln Leu Ala Gln Leu Lys Ile Pro Val Ile Val Tyr
115 120 125

Leu Lys Tyr Arg Lys Asp Asp His Phe Ser Val Leu Arg Gly Ile Asp
 130 135 140
 Gly Asn Thr Val Leu Leu Ala Asp Pro Ser Leu Gly His Val Ser Met
 145 150 155 160
 Ser Arg Ala Gln Phe Leu Asp Ala Trp Gln Thr Arg Glu Gly Asn Leu
 165 170 175
 Ala Gly Lys Ile Leu Ala Val Ile Pro Lys Lys Ala Glu Thr Ile Ser
 180 185 190
 Asn Lys Leu Phe Phe Thr Gln His Pro Lys Arg Gln Thr Glu Phe Thr
 195 200 205
 Val Gly Gln Ile Arg Gln Ala Arg Ala Glu
 210 215

<210> 2913
 <211> 657
 <212> DNA
 <213> Neisseria meningitidis

<400> 2913
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 gtgttgaaaa agctggataa ggagcagatg cgcgcgtcgt ttgaggatat gcggcgcatt 300
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 cgcgggatag acggcaatac ggttttgctt gccgaccgt cgctgggtca tgtttcaatg 480
 agcagggcgc agttttngga tgcttgcaa acccgtgagg gaaatttggc aggtaagatt 540
 ttggcggtcg tgccgaaaaa agccgagaca atttcaaata aattgtttt cacacatcat 600
 cccaagcggc agacggagtt tgcagtcgga caaatcaggc aagcacgtgc agagtaa 657

<210> 2914
 <211> 218
 <212> PRT
 <213> Neisseria meningitidis

<400> 2914
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 20 25 30
 Val Tyr Gly Lys Ile Lys Val Gln Ser Trp Lys Glu Arg Arg Asp Phe
 35 40 45
 Asn Ile Val Lys Gln Asp Leu Asp Phe Ser Cys Gly Ala Ala Ser Val
 50 55 60
 Ala Thr Leu Leu Asn Asn Phe Tyr Gly Gln Thr Leu Thr Glu Glu Glu

65		70		75		80
Val Leu Lys Lys	Leu Asp Lys Glu Gln Met Arg Ala Ser Phe Glu Asp					
	85		90			95
Met Arg Arg Ile	Met Pro Asp Leu Gly Phe Glu Ala Lys Gly Tyr Ala					
	100		105			110
Leu Ser Phe Glu Gln	Leu Ala Gln Leu Lys Ile Pro Val Ile Val Tyr					
	115		120			125
Leu Lys Tyr Arg	Lys Asp Asp His Phe Ser Val Leu Arg Gly Ile Asp					
	130		135			140
Gly Asn Thr Val	Leu Leu Ala Asp Pro Ser Leu Gly His Val Ser Met					
	145		150			155
Ser Arg Ala Gln	Phe Xaa Asp Ala Trp Gln Thr Arg Glu Gly Asn Leu					
	165		170			175
Ala Gly Lys Ile	Leu Ala Val Val Pro Lys Lys Ala Glu Thr Ile Ser					
	180		185			190
Asn Lys Leu Phe	Phe Thr His His Pro Lys Arg Gln Thr Glu Phe Ala					
	195		200			205
Val Gly Gln Ile	Arg Gln Ala Arg Ala Glu					
	210		215			

<210> 2915
 <211> 561
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 2915
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 accaacgtcg gcggttttta cggctcgacc gggtccgctg agttcgatca agcaaaacgc 180
 gacggcaaaa tcgacatcac cattcccgtc gccaacctgc aaagcgggtc gcaacccttc 240
 accggccacc tgaaatccgc cgacatcttc gatgccgctc aatatccgga catccgcttc 300
 gtttccacca aattcaactt caacggcaaa aaacttgttt ccgttgacgg caacctgacc 360
 atgcgcggca aaaccgcccc cgtcaaaactc aaagccgaaa aattcaactg ctaccaaagc 420
 ccgatggcgg aaaccgaagt ttgcggcggc gacttcagca ccaccatcga ccgcacaaaa 480
 tggggcgtgg actacctcgt taacgccggt atgacaaaaa acgtccgcat cgacatccaa 540
 atcgaagctg caaaacaata a 561

<210> 2916
 <211> 186
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 2916
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Ala Ser Ala Thr Tyr Lys Val Asp Glu Tyr His Ala Asn Val Arg Phe
20 25 30

Ala Ile Asp His Phe Asn Thr Ser Thr Asn Val Gly Gly Phe Tyr Gly
35 40 45

Leu Thr Gly Ser Val Glu Phe Asp Gln Ala Lys Arg Asp Gly Lys Ile
50 55 60

Asp Ile Thr Ile Pro Val Ala Asn Leu Gln Ser Gly Ser Gln Pro Phe
65 70 75 80

Thr Gly His Leu Lys Ser Ala Asp Ile Phe Asp Ala Ala Gln Tyr Pro
85 90 95

Asp Ile Arg Phe Val Ser Thr Lys Phe Asn Phe Asn Gly Lys Lys Leu
100 105 110

Val Ser Val Asp Gly Asn Leu Thr Met Arg Gly Lys Thr Ala Pro Val
115 120 125

Lys Leu Lys Ala Glu Lys Phe Asn Cys Tyr Gln Ser Pro Met Ala Glu
130 135 140

Thr Glu Val Cys Gly Gly Asp Phe Ser Thr Thr Ile Asp Arg Thr Lys
145 150 155 160

Trp Gly Val Asp Tyr Leu Val Asn Ala Gly Met Thr Lys Asn Val Arg
165 170 175

Ile Asp Ile Gln Ile Glu Ala Ala Lys Gln
180 185

<210> 2917

<211> 564

<212> DNA

<213> Neisseria meningitidis

<400> 2917

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agcaccaacg tcggcggttt ttacggtctg accggttcg tcgagttcga ccaagcaaaa 180
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accatgcacg gcaaaaccgc ccccgtaaaa ctcaaagccg aaaaattcaa ctgctaccaa 420
agcccgatgg agaaaaccga agtttgtggc ggcgaactca gcaccaccat cgaccgcacc 480
aaatggggca tggactacct cgttaacggt ggtatgacca aaagcgtcg catcgacatc 540
caaatcgagg cagccaaaca ataa 564

<210> 2918

<211> 187

<212> PRT

<213> Neisseria meningitidis

<400> 2918

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Ala Ser Ala Ala Thr Tyr Lys Val Asp Glu Tyr His Ala Asn Ala Arg
20 25 30

Phe Ala Ile Asp His Phe Asn Thr Ser Thr Asn Val Gly Gly Phe Tyr
35 40 45

Gly Leu Thr Gly Ser Val Glu Phe Asp Gln Ala Lys Arg Asp Gly Lys
50 55 60

Ile Asp Ile Thr Ile Pro Ile Ala Asn Leu Gln Ser Gly Ser Gln His
65 70 75 80

Phe Thr Asp His Leu Lys Ser Ala Asp Ile Phe Asp Ala Ala Gln Tyr
85 90 95

Pro Asp Ile Arg Phe Val Ser Thr Lys Phe Asn Phe Asn Gly Lys Lys
100 105 110

Leu Val Ser Val Asp Gly Asn Leu Thr Met His Gly Lys Thr Ala Pro
115 120 125

Val Lys Leu Lys Ala Glu Lys Phe Asn Cys Tyr Gln Ser Pro Met Glu
130 135 140

Lys Thr Glu Val Cys Gly Gly Asp Phe Ser Thr Thr Ile Asp Arg Thr
145 150 155 160

Lys Trp Gly Met Asp Tyr Leu Val Asn Val Gly Met Thr Lys Ser Val
165 170 175

Arg Ile Asp Ile Gln Ile Glu Ala Ala Lys Gln
180 185

<210> 2919

<211> 564

<212> DNA

<213> Neisseria meningitidis

<400> 2919

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acctacaaag tggacgaata tcacgccaac gcccgtttct ctatcgacca tttcaacacc 120
agcaccaacg tcggcggttt ttacggtctg accggttccg ttgagttcga ccaagcaaaa 180
cgcgacggta aaatcgacat caccatcccc gttgccaacc tgcaaagcgg ttcgcaaacac 240
tttaccgacc acctgaaatc agccgacatc ttcgatgccg cccaatatcc ggacatccgc 300
tttgtttcca ccaaatcaaa cttcaacggc aaaaaactgg tttccgttga cggcaacctg 360
accatgcacg gcaaaaaccgc ccccgtaaaa ctcaaagccg aaaaattcaa ctgctaccaa 420
agcccgatgt tgaaaaccga agtttgcggc ggcgacttca gcaccaccat cgaccgcacc 480
aaatggggca tggactacct cgtaaagcgtt ggtatgacca aaagcgccgc catcgacatc 540
caaatcgagg cagccaaaca ataa 564

<210> 2920

<211> 187

<212> PRT

<213> *Neisseria meningitidis*

<400> 2920

Met Lys Lys Ile Ile Ile Ala Ala Leu Ala Ala Ala Ala Ile Gly Thr
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Ala Ser Ala Ala Thr Tyr Lys Val Asp Glu Tyr His Ala Asn Ala Arg
20 25 30

Phe Ser Ile Asp His Phe Asn Thr Ser Thr Asn Val Gly Gly Phe Tyr
35 40 45

Gly Leu Thr Gly Ser Val Glu Phe Asp Gln Ala Lys Arg Asp Gly Lys
50 55 60

Ile Asp Ile Thr Ile Pro Val Ala Asn Leu Gln Ser Gly Ser Gln His
65 70 75 80

Phe Thr Asp His Leu Lys Ser Ala Asp Ile Phe Asp Ala Ala Gln Tyr
85 90 95

Pro Asp Ile Arg Phe Val Ser Thr Lys Phe Asn Phe Asn Gly Lys Lys
100 105 110

Leu Val Ser Val Asp Gly Asn Leu Thr Met His Gly Lys Thr Ala Pro
115 120 125

Val Lys Leu Lys Ala Glu Lys Phe Asn Cys Tyr Gln Ser Pro Met Leu
130 135 140

Lys Thr Glu Val Cys Gly Gly Asp Phe Ser Thr Thr Ile Asp Arg Thr
145 150 155 160

Lys Trp Gly Met Asp Tyr Leu Val Asn Val Gly Met Thr Lys Ser Val
165 170 175

Arg Ile Asp Ile Gln Ile Glu Ala Ala Lys Gln
180 185

<210> 2921

<211> 477

<212> DNA

<213> *Neisseria meningitidis*

<400> 2921

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tcgcagaaag ctgatgcgga gcagtatttt ttggccaata aatatcaatt tgcagatgag 120
aaacaggcctt tttattttga acgcgccgcc cgtttccgtg tattgcaaca aggccttggc 180
ggggattttg agaggttttt aaaaggagaa atacctaata aagaaaatct tgcaaagtat 240
cgtgaaaata ttactcaagc agtcgcttat tatgcggaca cgaatggaga tgatgaccca 300
taccgcgtct gcaaacaggc tgcgcaagat gcagaaatcc tgatgaagag tatggttaaca 360
agcgggtggag gcggtacaac tgatttagat aaggaaagtt atcaaaatta ccgaaaatca 420
atgcaagaat gccgtaaaaac aataacggaa gctgaagcca atttgccgaa aaaataa 477

<210> 2922
 <211> 158
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2922
 Met Lys Lys Phe Tyr Phe Val Leu Leu Ala Leu Gly Leu Ala Ala Cys
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 Gly Gln Glu Gln Ser Gln Lys Ala Asp Ala Glu Gln Tyr Phe Phe Ala
 20 25 30
 Asn Lys Tyr Gln Phe Ala Asp Glu Lys Gln Ala Phe Tyr Phe Glu Arg
 35 40 45
 Ala Ala Arg Phe Arg Val Leu Gln Gln Gly Leu Gly Gly Asp Phe Glu
 50 55 60
 Arg Phe Leu Lys Gly Glu Ile Pro Asn Gln Glu Asn Leu Ala Lys Tyr
 65 70 75 80
 Arg Glu Asn Ile Thr Gln Ala Val Ala Tyr Tyr Ala Asp Thr Asn Gly
 85 90 95
 Asp Asp Asp Pro Tyr Arg Val Cys Lys Gln Ala Ala Gln Asp Ala Glu
 100 105 110
 Ile Leu Met Lys Ser Met Val Thr Ser Gly Gly Gly Gly Thr Thr Asp
 115 120 125
 Leu Asp Lys Glu Ser Tyr Gln Asn Tyr Arg Lys Ser Met Gln Glu Cys
 130 135 140
 Arg Lys Thr Ile Thr Glu Ala Glu Ala Asn Leu Pro Lys Lys
 145 150 155

<210> 2923
 <211> 993
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 2923
 atgttttaaaa aattcaaacc ggtactgttg tcattttttg cacttgtatt tgccttttgg 60
 ctgggaacag gtattgccta tgagattaat ccgcgttgg ttttgagcga tacggcaact 120
 gaagtacctg aaaatccgaa tgcttttgtg gcgaaacttg cccgcctgtt ccgaaatgcc 180
 gacagggcgg ttgtcatcgt gaaggaatcg atgaggacgg aggaaagcct tgccggagct 240
 gtggtgacg gtccgttgca gtcggagaag gattatctcg cgctcgctat ccggctcagt 300
 cgtttgaaag aaaaggcgaa atggtttcac gtaacggagc aggaacatgg ggaagaggtt 360
 tggctggatt actatatcgg cgagggcggg ttggttgagg tttcgctttc gcaacgctcg 420
 ccggaagcgt ttgttaatgc cgaatatctg tatcggaacg atcgctccgtt ttctgtaaat 480
 gtgtacggcg gaacggctca cgggaaaaat tatgaaacga caggagaata tcgggttggt 540
 tggcaaccgg acggttcggg atttgatgcg gcggggcgcg ggaaaatcgg ggaagatggt 600
 tatgagcatt gcctcgggtg ttatcagatg gcccggtat atttggcgaa ataccgggat 660
 gtgcgcgaatg acgagcagaa ggtttgggac ttccgcgaag agagcaaccg gattgcatcg 720

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gactcgcgcg attatgtgtt ttatcagaat atgcgggaat tgatgccccg ggggatgaag 780
gcgaacagtc ttgtggtcgc ctatgatgcg gacggtctgc cgcaaaaagt ctattggagt 840
gtcgacaatg gaaaaaaacc ccaaagtgtc gaatattatt tgaaaaacgg aaatcttttt 900
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tatcatgcgc aacaaacgtt gtatttgat ggg                                     993

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<210> 2924

<211> 331

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 2924

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Met Phe Lys Lys Phe Lys Pro Val Leu Leu Ser Phe Phe Ala Leu Val
  1                               5               10               15

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Phe Ala Phe Trp Leu Gly Thr Gly Ile Ala Tyr Glu Ile Asn Pro Arg
      20                25                30

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```

Trp Phe Leu Ser Asp Thr Ala Thr Glu Val Pro Glu Asn Pro Asn Ala
    35                40                45

```

```

Phe Val Ala Lys Leu Ala Arg Leu Phe Arg Asn Ala Asp Arg Ala Val
    50                55                60

```

```

Val Ile Val Lys Glu Ser Met Arg Thr Glu Glu Ser Leu Ala Gly Ala
    65                70                75                80

```

```

Val Asp Asp Gly Pro Leu Gln Ser Glu Lys Asp Tyr Leu Ala Leu Ala
      85                90                95

```

```

Ile Arg Leu Ser Arg Leu Lys Glu Lys Ala Lys Trp Phe His Val Thr
    100                105                110

```

```

Glu Gln Glu His Gly Glu Glu Val Trp Leu Asp Tyr Tyr Ile Gly Glu
    115                120                125

```

```

Gly Gly Leu Val Ala Val Ser Leu Ser Gln Arg Ser Pro Glu Ala Phe
    130                135                140

```

```

Val Asn Ala Glu Tyr Leu Tyr Arg Asn Asp Arg Pro Phe Ser Val Asn
    145                150                155                160

```

```

Val Tyr Gly Gly Thr Ala His Gly Glu Asn Tyr Glu Thr Thr Gly Glu
    165                170                175

```

```

Tyr Arg Val Val Trp Gln Pro Asp Gly Ser Val Phe Asp Ala Ala Gly
    180                185                190

```

```

Arg Gly Lys Ile Gly Glu Asp Val Tyr Glu His Cys Leu Gly Cys Tyr
    195                200                205

```

```

Gln Met Ala Gln Val Tyr Leu Ala Lys Tyr Arg Asp Val Ala Asn Asp
    210                215                220

```

```

Glu Gln Lys Val Trp Asp Phe Arg Glu Glu Ser Asn Arg Ile Ala Ser
    225                230                235                240

```

Asp Ser Arg Asp Tyr Val Phe Tyr Gln Asn Met Arg Glu Leu Met Pro
 245 250 255
 Arg Gly Met Lys Ala Asn Ser Leu Val Val Gly Tyr Asp Ala Asp Gly
 260 265 270
 Leu Pro Gln Lys Val Tyr Trp Ser Val Asp Asn Gly Lys Lys Pro Gln
 275 280 285
 Ser Val Glu Tyr Tyr Leu Lys Asn Gly Asn Leu Phe Ile Ala Gln Ser
 290 295 300
 Ser Thr Val Thr Leu Lys Thr Asp Gly Val Thr Ala Asp Met Gln Thr
 305 310 315 320
 Tyr His Ala Gln Gln Thr Leu Tyr Leu Asp Gly
 325 330

<210> 2925
 <211> 1134
 <212> DNA
 <213> Neisseria meningitidis

<400> 2925
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 ctgggaacgg gtattgccta tgagattaat ccgcgttggg ttttgagcga tacggcaact 120
 gaagtaccta aaaatccgaa tgctttttgtg gcgaaacttg cccgcctgtt ccgaaatgcc 180
 gacagggcgg ttgtcatcgt gaaggaatcg ataaggacgg aggaaaatct tgccggaact 240
 gtggatgacg gtcggtgca gtcggagaag gattatctcg cgctcgctat ccggctcagt 300
 cgtttgaaag aaaaggcgaa atggtttcac gtaacggagc aggaacatgg gaaagaggtt 360
 tggctggatt accatatcgg cgagggcggg ttggttgcgg ttctgctttc gcaacgctcg 420
 ccggaagcat ttgttaatgc cgaatatctg tatcggaacg atcgtccgtt ttctgtaaat 480
 gtgtacggcg gaacggttca cggggaaaat tatgaaacga caggagaata tcgggttgtt 540
 tggcaaccag acggttcggt atttgatgcg gcggggcgcg ggaaaatcgg ggaagatgtt 600
 tatgagcatt gcctcgggtg ttatcagatg gcccagggtat atttggcgaa ataccgggat 660
 gtcgcgaatg acgagcagaa ggtttgggac ttccgcaaag agagcaaccg aattgcgtcg 720
 gactcgcgca attctgtgtt ttatcagaat atgcgggaat tgatgccccg agggatgaag 780
 gcgaacagtc ttgtggtcgg ctatgatgcg gacggtctgc cgcaaaaagt ctattggagt 840
 ttcgacaatg gaaaaaaacg ccagagtttc gaatattatt tgaaaaacgg aaatcttttt 900
 attgcacaat cttcgacggt agcattgaaa gcggatggcg taacggcgga tatgcagacc 960
 tatcatgcgc aacagacgtg gtatttggat ggcgggcgga ttgtccgca agagaaacag 1020
 ggagacagac tgctgatatt tcctttgaac ttggaaaatt tggaaaaaga ggtgcgcggt 1080
 tatgcagagg ctgcggcgag acgttcgggc ggcaggcgcg acctttctca ctga 1134

<210> 2926
 <211> 377
 <212> PRT
 <213> Neisseria meningitidis

<400> 2926
 Met Phe Lys Lys Phe Lys Pro Val Leu Leu Ser Phe Phe Ala Leu Val
 1 5 10 15

Phe Ala Phe Trp Leu Gly Thr Gly Ile Ala Tyr Glu Ile Asn Pro Arg

20					25					30						
Trp	Phe	Leu	Ser	Asp	Thr	Ala	Thr	Glu	Val	Pro	Lys	Asn	Pro	Asn	Ala	
35					40					45						
Phe	Val	Ala	Lys	Leu	Ala	Arg	Leu	Phe	Arg	Asn	Ala	Asp	Arg	Ala	Val	
50					55					60						
Val	Ile	Val	Lys	Glu	Ser	Ile	Arg	Thr	Glu	Glu	Asn	Leu	Ala	Gly	Thr	
65					70					75					80	
Val	Asp	Asp	Gly	Pro	Leu	Gln	Ser	Glu	Lys	Asp	Tyr	Leu	Ala	Leu	Ala	
85					90					95						
Ile	Arg	Leu	Ser	Arg	Leu	Lys	Glu	Lys	Ala	Lys	Trp	Phe	His	Val	Thr	
100					105					110						
Glu	Gln	Glu	His	Gly	Lys	Glu	Val	Trp	Leu	Asp	Tyr	His	Ile	Gly	Glu	
115					120					125						
Gly	Gly	Leu	Val	Ala	Val	Ser	Leu	Ser	Gln	Arg	Ser	Pro	Glu	Ala	Phe	
130					135					140						
Val	Asn	Ala	Glu	Tyr	Leu	Tyr	Arg	Asn	Asp	Arg	Pro	Phe	Ser	Val	Asn	
145					150					155					160	
Val	Tyr	Gly	Gly	Thr	Val	His	Gly	Glu	Asn	Tyr	Glu	Thr	Thr	Gly	Glu	
165					170					175						
Tyr	Arg	Val	Val	Trp	Gln	Pro	Asp	Gly	Ser	Val	Phe	Asp	Ala	Ala	Gly	
180					185					190						
Arg	Gly	Lys	Ile	Gly	Glu	Asp	Val	Tyr	Glu	His	Cys	Leu	Gly	Cys	Tyr	
195					200					205						
Gln	Met	Ala	Gln	Val	Tyr	Leu	Ala	Lys	Tyr	Arg	Asp	Val	Ala	Asn	Asp	
210					215					220						
Glu	Gln	Lys	Val	Trp	Asp	Phe	Arg	Lys	Glu	Ser	Asn	Arg	Ile	Ala	Ser	
225					230					235					240	
Asp	Ser	Arg	Asn	Ser	Val	Phe	Tyr	Gln	Asn	Met	Arg	Glu	Leu	Met	Pro	
245					250					255						
Arg	Gly	Met	Lys	Ala	Asn	Ser	Leu	Val	Val	Gly	Tyr	Asp	Ala	Asp	Gly	
260					265					270						
Leu	Pro	Gln	Lys	Val	Tyr	Trp	Ser	Phe	Asp	Asn	Gly	Lys	Lys	Arg	Gln	
275					280					285						
Ser	Phe	Glu	Tyr	Tyr	Leu	Lys	Asn	Gly	Asn	Leu	Phe	Ile	Ala	Gln	Ser	
290					295					300						
Ser	Thr	Val	Ala	Leu	Lys	Ala	Asp	Gly	Val	Thr	Ala	Asp	Met	Gln	Thr	
305					310					315					320	
Tyr	His	Ala	Gln	Gln	Thr	Trp	Tyr	Leu	Asp	Gly	Gly	Arg	Ile	Val	Arg	

325

330

335

Glu Glu Lys Gln Gly Asp Arg Leu Pro Asp Phe Pro Leu Asn Leu Glu
 340 345 350

Asn Leu Glu Lys Glu Val Arg Arg Tyr Ala Glu Ala Ala Ala Arg Arg
 355 360 365

Ser Gly Gly Arg Arg Asp Leu Ser His
 370 375

<210> 2927

<211> 1125

<212> DNA

<213> Neisseria meningitidis

<400> 2927

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gaaaatccga atgcttttgt ggcgaaactt gccgcctgt tccgaaatgc cgacagggcg 180
gttgatcatcg tgaaggaatc gatgaggacg gaggaagtc ttgccggagc tgtggatgac 240
ggtccgtttgc agtcggagaa ggattatctt gcaactcgctg tccggctcag tcgtttgaaa 300
gaaaaggcga aatggtttca cgtaacggag caggaacatg gggaagaggt ttggctggat 360
tactatatcg gcgagggcgg tttggttgcg gtttcgcttt cgcaacgctc gccggaagcg 420
tttgttaatg ccgaatatct gtatcggaac gatcgctccg tttctgtaaa tgtgtacggc 480
ggaacggttc acggggaaaa ttatgaaacg acaggagaat atcgggttgt ttggcaaccg 540
gacggttcgg tatttgatgc gtcggggcgc gggaaaatcg gggaagatgt ttatgagcat 600
tgcctcgggt gttatcagat ggcccaggta tatttgccga aatatcgga tgtcgcgaat 660
gatgagcaga aggtttggga cttccgcgaa gagagtaacc ggattgcgct ggactcgcgc 720
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caacagacgt ggtatttaga tggcgggagg attgtccgcg aagagaaaaca gggggacaga 1020
ctgcctgatt ttcctttgaa cttggaagat ttggaaaaag aggtgagccg ttatgcagag 1080
gctgcggcga gacgttcggg cggcaggcgc gacctttctc actga 1125

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<210> 2928

<211> 374

<212> PRT

<213> Neisseria meningitidis

<400> 2928

Met Phe Lys Lys Phe Lys Pro Val Leu Leu Ser Phe Phe Ala Leu Val
 1 5 10 15

Phe Ala Phe Trp Leu Gly Thr Gly Ile Ala Tyr Glu Ile Asn Pro Arg
 20 25 30

Trp Phe Leu Ser Asp Thr Ala Thr Glu Asn Pro Asn Ala Phe Val Ala
 35 40 45

Lys Leu Ala Arg Leu Phe Arg Asn Ala Asp Arg Ala Val Val Ile Val
 50 55 60

Lys Glu Ser Met Arg Thr Glu Glu Ser Leu Ala Gly Ala Val Asp Asp
 65 70 75 80
 Gly Pro Leu Gln Ser Glu Lys Asp Tyr Leu Ala Leu Ala Val Arg Leu
 85 90 95
 Ser Arg Leu Lys Glu Lys Ala Lys Trp Phe His Val Thr Glu Gln Glu
 100 105 110
 His Gly Glu Glu Val Trp Leu Asp Tyr Tyr Ile Gly Glu Gly Gly Leu
 115 120 125
 Val Ala Val Ser Leu Ser Gln Arg Ser Pro Glu Ala Phe Val Asn Ala
 130 135 140
 Glu Tyr Leu Tyr Arg Asn Asp Arg Pro Phe Ser Val Asn Val Tyr Gly
 145 150 155 160
 Gly Thr Val His Gly Glu Asn Tyr Glu Thr Thr Gly Glu Tyr Arg Val
 165 170 175
 Val Trp Gln Pro Asp Gly Ser Val Phe Asp Ala Ser Gly Arg Gly Lys
 180 185 190
 Ile Gly Glu Asp Val Tyr Glu His Cys Leu Gly Cys Tyr Gln Met Ala
 195 200 205
 Gln Val Tyr Leu Ala Lys Tyr Arg Asp Val Ala Asn Asp Glu Gln Lys
 210 215 220
 Val Trp Asp Phe Arg Glu Glu Ser Asn Arg Ile Ala Ser Asp Ser Arg
 225 230 235 240
 Asp Ser Val Phe Tyr Gln Asn Met Arg Glu Leu Met Pro Arg Gly Met
 245 250 255
 Lys Ala Asn Ser Leu Val Val Gly Tyr Asp Ala Asp Gly Leu Pro Gln
 260 265 270
 Lys Val Tyr Trp Ser Phe Asp Asn Gly Lys Lys Arg Gln Ser Phe Glu
 275 280 285
 Tyr Tyr Leu Lys Asn Gly Asn Leu Phe Ile Ala Gln Ser Ser Thr Val
 290 295 300
 Ala Leu Lys Ala Asp Gly Val Thr Ala Asp Met Gln Thr Tyr His Ala
 305 310 315 320
 Gln Gln Thr Trp Tyr Leu Asp Gly Gly Arg Ile Val Arg Glu Glu Lys
 325 330 335
 Gln Gly Asp Arg Leu Pro Asp Phe Pro Leu Asn Leu Glu Asp Leu Glu
 340 345 350
 Lys Glu Val Ser Arg Tyr Ala Glu Ala Ala Ala Arg Arg Ser Gly Gly
 355 360 365

Arg Arg Asp Leu Ser His
370

<210> 2929
<211> 2406
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 2929
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cggggaaaag gcataggcgt tgccaaacac gccgccttcg tgttcggcgg cgttcccctt 720
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ccctga 2406

<210> 2930
<211> 801
<212> PRT

<213> Neisseria gonorrhoeae

<400> 2930

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Leu Ala Arg Leu Phe Ser Leu Lys Pro Leu Val Leu Ala Leu Gly Phe
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Cys Phe Gly Thr His Cys Ala Ala Asp Thr Val Ala Ala Glu Glu Ala
      20              25              30

Asp Gly Arg Val Ala Glu Gly Gly Ala Gln Gly Ala Ser Glu Ser Ala
      35              40              45

Gln Ala Ser Asp Leu Thr Leu Gly Ser Thr Cys Leu Phe Cys Ser Asn
      50              55              60

Glu Ser Gly Ser Pro Glu Arg Thr Glu Ala Ala Val Gln Gly Ser Gly
      65              70              75              80

Glu Ala Ser Val Pro Glu Asp Tyr Thr Arg Ile Val Ala Asp Arg Met
      85              90              95

Glu Gly Gln Ser Lys Val Lys Val Arg Ala Glu Gly Ser Val Ile Ile
      100              105              110

Glu Arg Asp Gly Ala Val Leu Asn Thr Asp Trp Ala Asp Tyr Asp Gln
      115              120              125

Ser Gly Asp Thr Val Thr Val Gly Asp Arg Phe Ala Leu Gln Gln Asp
      130              135              140

Gly Thr Leu Ile Arg Gly Glu Thr Leu Thr Tyr Asn Leu Asp Gln Gln
      145              150              155              160

Thr Gly Glu Ala His Asn Val Arg Met Glu Thr Glu Gln Gly Gly Arg
      165              170              175

Arg Leu Gln Ser Val Ser Arg Thr Ala Glu Met Leu Gly Glu Gly Arg
      180              185              190

Tyr Lys Leu Thr Glu Thr Gln Phe Asn Thr Cys Ser Ala Gly Asp Ala
      195              200              205

Gly Trp Tyr Val Lys Ala Ala Ser Val Glu Ala Asp Arg Gly Lys Gly
      210              215              220

Ile Gly Val Ala Lys His Ala Ala Phe Val Phe Gly Gly Val Pro Leu
      225              230              235              240

Phe Tyr Thr Pro Trp Ala Asp Phe Pro Leu Asp Gly Asn Arg Lys Ser
      245              250              255

Gly Leu Leu Val Pro Ser Val Ser Ala Gly Ser Asp Gly Val Ser Leu
      260              265              270

Ser Val Pro Tyr Tyr Phe Asn Leu Ala Pro Asn Phe Asp Ala Thr Phe
      275              280              285
```

Ala	Pro	Gly	Ile	Ile	Gly	Glu	Arg	Gly	Ala	Thr	Phe	Asp	Gly	Gln	Ile		
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Arg	Tyr	Leu	Arg	Pro	Asp	Tyr	Ser	Gly	Gln	Thr	Asp	Leu	Thr	Trp	Leu		
	305				310					315					320		
Pro	His	Asp	Lys	Lys	Ser	Gly	Arg	Asn	Asn	Arg	Tyr	Gln	Ala	Lys	Trp		
				325					330					335			
Gln	His	Arg	His	Asp	Ile	Ser	Asp	Thr	Leu	Gln	Ala	Gly	Val	Asp	Phe		
			340					345					350				
Asn	Gln	Val	Ser	Asp	Ser	Gly	Tyr	Tyr	Arg	Asp	Phe	Tyr	Gly	Gly	Glu		
		355					360					365					
Glu	Ile	Ala	Gly	Asn	Val	Asn	Leu	Asn	Arg	Arg	Val	Trp	Leu	Asp	Tyr		
	370					375					380						
Gly	Gly	Arg	Ala	Ala	Gly	Gly	Ser	Leu	Asn	Ala	Gly	Leu	Ser	Val	Gln		
	385				390					395					400		
Lys	Tyr	Gln	Thr	Leu	Ala	Asn	Gln	Ser	Gly	Tyr	Lys	Asp	Glu	Pro	Tyr		
				405					410					415			
Ala	Ile	Met	Pro	Arg	Leu	Ser	Ala	Asp	Trp	His	Lys	Asn	Ala	Gly	Arg		
			420					425					430				
Ala	Gln	Ile	Gly	Val	Ser	Ala	Gln	Phe	Thr	Arg	Phe	Ser	His	Asp	Gly		
		435					440					445					
Arg	Gln	Asp	Gly	Ser	Arg	Leu	Val	Val	Tyr	Pro	Gly	Ile	Lys	Trp	Asp		
		450				455					460						
Phe	Ser	Asn	Ser	Trp	Gly	Tyr	Val	Arg	Pro	Lys	Leu	Gly	Leu	His	Ala		
	465				470					475					480		
Thr	Tyr	Tyr	Ser	Leu	Asp	Ser	Phe	Gly	Gly	Lys	Ala	Ser	Arg	Ser	Val		
				485					490					495			
Gly	Arg	Val	Leu	Pro	Val	Val	Asn	Ile	Asp	Gly	Gly	Thr	Thr	Phe	Glu		
			500					505					510				
Arg	Asn	Thr	Arg	Leu	Phe	Gly	Gly	Gly	Val	Val	Gln	Thr	Ile	Glu	Pro		
		515					520					525					
Arg	Leu	Phe	Tyr	Asn	Tyr	Ile	Pro	Ala	Lys	Ser	Gln	Asn	Asp	Leu	Pro		
	530					535					540						
Asn	Phe	Asp	Ser	Ser	Glu	Ser	Ser	Phe	Gly	Tyr	Gly	Gln	Leu	Phe	Arg		
	545				550					555					560		
Glu	Asn	Leu	Tyr	Tyr	Gly	Asn	Asp	Arg	Ile	Asn	Ala	Ala	Asn	Ser	Leu		
				565					570					575			
Ser	Thr	Ala	Val	Gln	Ser	Arg	Ile	Leu	Asp	Gly	Ala	Thr	Gly	Glu	Glu		
			580					585					590				

Arg Phe Arg Ala Gly Ile Gly Gln Lys Phe Tyr Phe Lys Asp Asp Ala
 595 600 605
 Val Met Leu Asp Gly Ser Val Gly Lys Asn Pro Arg Ser Arg Ser Asp
 610 615 620
 Trp Val Ala Phe Ala Ser Gly Gly Ile Gly Gly Arg Phe Thr Leu Asp
 625 630 635 640
 Ser Ser Ile His Tyr Asn Gln Asn Asp Lys Arg Ala Glu His Tyr Ala
 645 650 655
 Val Gly Ala Gly Tyr Arg Pro Ala Pro Gly Lys Val Leu Asn Ala Arg
 660 665 670
 Tyr Lys Tyr Gly Arg Asn Glu Lys Ile Tyr Leu Gln Ala Asp Gly Ser
 675 680 685
 Tyr Phe Tyr Asp Lys Leu Ser Gln Leu Asp Leu Ser Ala Gln Trp Pro
 690 695 700
 Leu Thr Arg Asn Leu Ser Ala Val Val Arg Tyr Asn Tyr Gly Phe Glu
 705 710 715 720
 Ala Lys Lys Pro Ile Glu Met Leu Ala Gly Ala Glu Tyr Lys Ser Ser
 725 730 735
 Cys Gly Cys Trp Gly Ala Gly Val Tyr Ala Gln Arg Tyr Val Thr Gly
 740 745 750
 Glu Asn Thr Tyr Lys Asn Ala Val Phe Phe Ser Leu Gln Leu Lys Asp
 755 760 765
 Leu Ser Ser Val Gly Arg Asn Pro Ala Gly Arg Met Asp Val Ala Val
 770 775 780
 Pro Gly Tyr Ile Pro Ala His Ser Leu Ser Ala Gly Arg Asn Lys Arg
 785 790 795 800
 Pro

<210> 2931
 <211> 2409
 <212> DNA
 <213> Neisseria meningitidis

<400> 2931
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 agcgttcggg gcgtgtccga acccatacag cctaccagcc tgagcctcgg ttcgacctgc 180
 ctgttttgca gtaacgaaag cggcagcccc gagagaaccg aagccgccgt ccaaggcagc 240
 ggcaagcat ccatccccga agactatacg cgcatgttg cgcacaggat ggaaggacag 300
 tcgcaggtgc aggtgcgtgc cgaaggcaac gtcgtcgtcg aacgcaaccg gacgaccctc 360
 aataccgatt gggcggtatta cgaccagtcg ggcgacaccg ttaccgcagg cgaccggttc 420
 gccctccaac aggacggtac gctgattcgg ggcgaaaccc tgacctacaa tctcgagcag 480

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ttcaaacacct gttccgccgg cgatgccggc tggatatgtca aggcagcctc tgtcgaagcc 660
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gttccctcac tgtccgccgg ttcggacggc gtttcccttt ccgttcccta ttatttcaac 840
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gacatcaaat gggatttcag caacagctgg ggctatgtcc gtcccaaact cggactgcac 1440
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<210> 2932
<211> 802
<212> PRT
<213> Neisseria meningitidis

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<400> 2932
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Cys Phe Gly Thr His Cys Ala Ala Ala Asp Ala Val Ala Ala Glu Glu
 20             25            30

Thr Asp Asn Pro Thr Ala Gly Glu Ser Val Arg Ser Val Ser Glu Pro
 35             40            45

Ile Gln Pro Thr Ser Leu Ser Leu Gly Ser Thr Cys Leu Phe Cys Ser
 50             55            60

Asn Glu Ser Gly Ser Pro Glu Arg Thr Glu Ala Ala Val Gln Gly Ser
 65             70            75            80

Gly Glu Ala Ser Ile Pro Glu Asp Tyr Thr Arg Ile Val Ala Asp Arg

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85										90					95				
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Val	Glu	Arg	Asn	Arg	Thr	Thr	Leu	Asn	Thr	Asp	Trp	Ala	Asp	Tyr	Asp				
		115					120					125							
Gln	Ser	Gly	Asp	Thr	Val	Thr	Ala	Gly	Asp	Arg	Phe	Ala	Leu	Gln	Gln				
	130					135					140								
Asp	Gly	Thr	Leu	Ile	Arg	Gly	Glu	Thr	Leu	Thr	Tyr	Asn	Leu	Glu	Gln				
145				150						155					160				
Gln	Thr	Gly	Glu	Ala	His	Asn	Val	Arg	Met	Glu	Ile	Glu	Gln	Gly	Gly				
			165					170						175					
Arg	Arg	Leu	Gln	Ser	Val	Ser	Arg	Thr	Ala	Glu	Met	Leu	Gly	Glu	Gly				
		180						185					190						
His	Tyr	Lys	Leu	Thr	Glu	Thr	Gln	Phe	Asn	Thr	Cys	Ser	Ala	Gly	Asp				
		195					200					205							
Ala	Gly	Trp	Tyr	Val	Lys	Ala	Ala	Ser	Val	Glu	Ala	Asp	Arg	Glu	Lys				
	210					215					220								
Gly	Ile	Gly	Val	Ala	Lys	His	Ala	Ala	Phe	Val	Phe	Gly	Gly	Val	Pro				
225				230						235					240				
Ile	Phe	Tyr	Thr	Pro	Trp	Ala	Asp	Phe	Pro	Leu	Asp	Gly	Asn	Arg	Lys				
			245					250					255						
Ser	Gly	Leu	Leu	Val	Pro	Ser	Leu	Ser	Ala	Gly	Ser	Asp	Gly	Val	Ser				
		260					265						270						
Leu	Ser	Val	Pro	Tyr	Tyr	Phe	Asn	Leu	Ala	Pro	Asn	Leu	Asp	Ala	Thr				
		275					280					285							
Phe	Ala	Pro	Ser	Val	Ile	Gly	Glu	Arg	Gly	Ala	Val	Phe	Asp	Gly	Gln				
	290				295					300									
Val	Arg	Tyr	Leu	Arg	Pro	Asp	Tyr	Ala	Gly	Gln	Ser	Asp	Leu	Thr	Trp				
305				310						315					320				
Leu	Pro	His	Asp	Lys	Lys	Ser	Gly	Arg	Asn	Asn	Arg	Tyr	Gln	Ala	Lys				
			325					330					335						
Trp	Gln	His	Arg	His	Asp	Ile	Ser	Asp	Thr	Leu	Gln	Ala	Gly	Val	Asp				
		340					345					350							
Phe	Asn	Gln	Val	Ser	Asp	Ser	Gly	Tyr	Tyr	Arg	Asp	Phe	Tyr	Gly	Asn				
	355						360					365							
Lys	Glu	Ile	Ala	Gly	Asn	Val	Asn	Leu	Asn	Arg	Arg	Val	Trp	Leu	Asp				
	370				375					380									
Tyr	Gly	Gly	Arg	Ala	Ala	Gly	Gly	Ser	Leu	Asn	Ala	Gly	Leu	Ser	Val				

385		390		395		400
Leu Lys Tyr Gln Thr Leu Ala Asn Gln Ser Gly Tyr Lys Asp Lys Pro						
	405			410		415
Tyr Ala Leu Met Pro Arg Leu Ser Val Glu Trp Arg Lys Asn Thr Gly						
	420			425		430
Arg Ala Gln Ile Gly Val Ser Ala Gln Phe Thr Arg Phe Ser His Asp						
	435			440		445
Ser Arg Gln Asp Gly Ser Arg Leu Val Val Tyr Pro Asp Ile Lys Trp						
	450			455		460
Asp Phe Ser Asn Ser Trp Gly Tyr Val Arg Pro Lys Leu Gly Leu His						
	465			470		475
Ala Thr Tyr Tyr Ser Leu Asn Arg Phe Gly Ser Gln Glu Ala Arg Arg						
	485			490		495
Val Ser Arg Thr Leu Pro Ile Val Asn Ile Asp Ser Gly Ala Thr Phe						
	500			505		510
Glu Arg Asn Thr Arg Met Phe Gly Gly Glu Val Leu Gln Thr Leu Glu						
	515			520		525
Pro Arg Leu Phe Tyr Asn Tyr Ile Pro Ala Lys Ser Gln Asn Asp Leu						
	530			535		540
Pro Asn Phe Asp Ser Ser Glu Ser Ser Phe Gly Tyr Gly Gln Leu Phe						
	545			550		555
Arg Glu Asn Leu Tyr Tyr Gly Asn Asp Arg Ile Asn Thr Ala Asn Ser						
	565			570		575
Leu Ser Ala Ala Val Gln Ser Arg Ile Leu Asp Gly Ala Thr Gly Glu						
	580			585		590
Glu Arg Phe Arg Ala Gly Ile Gly Gln Lys Phe Tyr Phe Lys Asp Asp						
	595			600		605
Ala Val Met Leu Asp Gly Ser Val Gly Lys Lys Pro Arg Asn Arg Ser						
	610			615		620
Asp Trp Val Ala Phe Ala Ser Gly Ser Ile Gly Ser Arg Phe Ile Leu						
	625			630		635
Asp Ser Ser Ile His Tyr Asn Gln Asn Asp Lys Arg Ala Glu Asn Tyr						
	645			650		655
Ala Val Gly Ala Ser Tyr Arg Pro Ala Gln Gly Lys Val Leu Asn Ala						
	660			665		670
Arg Tyr Lys Tyr Gly Arg Asn Glu Lys Ile Tyr Leu Lys Ser Asp Gly						
	675			680		685
Ser Tyr Phe Tyr Asp Lys Leu Ser Gln Leu Asp Leu Ser Ala Gln Trp						

690		695		700
Pro Leu Thr Arg Asn Leu Ser Ala Val Val Arg Tyr Asn Tyr Gly Phe				
705		710		715 720
Glu Ala Lys Lys Pro Ile Glu Val Leu Ala Gly Ala Glu Tyr Lys Ser				
	725		730	735
Ser Cys Gly Cys Trp Gly Ala Gly Val Tyr Ala Gln Arg Tyr Val Thr				
	740		745	750
Gly Glu Asn Thr Tyr Lys Asn Ala Val Phe Phe Ser Leu Gln Leu Lys				
	755		760	765
Asp Leu Ser Ser Val Gly Arg Asn Pro Ala Asp Arg Met Asp Val Ala				
	770		775	780
Val Pro Gly Tyr Ile Thr Ala His Ser Leu Ser Ala Gly Arg Asn Lys				
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Arg Pro

<210> 2933

<211> 2409

<212> DNA

<213> Neisseria meningitidis

<400> 2933

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ctgttttgca	gtaacgaaag	cggcagcccc	gagagaaccg	aagccgccgt	ccaaggcagc	240
ggcgaagcat	ccatccccga	agactatacg	cgcatgtgtg	ccgacaggat	ggaaggacag	300
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gccctccaac	aggacggtac	gctgattcgg	ggcgaaaacc	tgacctacaa	tctcgagcag	480
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gatcgggaaa	aaggcatagg	cgttgccaaa	cacgccgcct	tcgtgttcgg	cggcgttccc	720
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cacgacattt	ccgacacgct	tcaggcgggt	gtcgatttca	accaagtctc	cgacagcggc	1080
tactaccgcg	acttttacgg	caacaaagaa	atcgccggca	acgtcaacct	caaccgccgt	1140
gtatggctgg	attatggcgg	cagggcggcg	ggcggcagcc	tgaatgccgg	ccttttcggtt	1200
ctgaaatacc	agacgttggc	aaaccaaagc	ggctacaaaag	acaaaccgta	tgccctgatg	1260
ccgcgccttt	ccgccgattg	gcgcaaaaac	accggcaggg	cgcaaatcgg	cgtgtccgcc	1320
caatttacc	gcttcagcca	cgacagccgc	caagacggca	gccgcctcgt	cgtctatccc	1380
gacatcaaat	gggatttcag	caacagcttg	ggttacgtcc	gtcccaaaact	cggactgcac	1440
gccacctatt	acagcctcaa	ccgcttcggc	agccaagaag	cccgcgcgt	cagccgcact	1500
ctgcccatcg	tcaacatcga	cagcggcatg	accttcgaac	gcaatacgcg	gatgttcggc	1560
ggcggagtc	tgcaaacctc	cgagccgcgc	ctgttctaca	actatattcc	tgccaaatcc	1620

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caaaacgacc tgcccaattt cgattcgtcg gaaagcagct tcggctacgg gcagcttttt 1680
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<210> 2934

<211> 802

<212> PRT

<213> *Neisseria meningitidis*

<400> 2934

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Leu Ala Arg Leu Phe Ser Leu Lys Pro Leu Val Leu Ala Leu Gly Phe
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Cys Phe Gly Thr His Cys Ala Ala Ala Asp Ala Val Ala Ala Glu Glu
      20              25              30

```

```

Thr Asp Asn Pro Thr Ala Gly Gly Ser Val Arg Ser Val Ser Glu Pro
      35              40              45

```

```

Ile Gln Pro Thr Ser Leu Ser Leu Gly Ser Thr Cys Leu Phe Cys Ser
      50              55              60

```

```

Asn Glu Ser Gly Ser Pro Glu Arg Thr Glu Ala Ala Val Gln Gly Ser
      65              70              75              80

```

```

Gly Glu Ala Ser Ile Pro Glu Asp Tyr Thr Arg Ile Val Ala Asp Arg
      85              90              95

```

```

Met Glu Gly Gln Ser Gln Val Gln Val Arg Ala Glu Gly Asn Val Val
      100             105             110

```

```

Val Glu Arg Asn Arg Thr Thr Leu Asn Ala Asp Trp Ala Asp Tyr Asp
      115             120             125

```

```

Gln Ser Gly Asp Thr Val Thr Ala Gly Asp Arg Phe Ala Leu Gln Gln
      130             135             140

```

```

Asp Gly Thr Leu Ile Arg Gly Glu Thr Leu Thr Tyr Asn Leu Glu Gln
      145             150             155             160

```

```

Gln Thr Gly Glu Ala His Asn Val Arg Met Glu Thr Glu His Gly Gly
      165             170             175

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```

Arg Arg Leu Gln Ser Val Ser Arg Thr Ala Glu Met Leu Gly Glu Gly
      180             185             190

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His	Tyr	Lys	Leu	Thr	Glu	Thr	Gln	Phe	Asn	Thr	Cys	Ser	Ala	Gly	Asp	195	200	205
Ala	Gly	Trp	Tyr	Val	Lys	Ala	Ala	Ser	Val	Glu	Ala	Asp	Arg	Glu	Lys	210	215	220
Gly	Ile	Gly	Val	Ala	Lys	His	Ala	Ala	Phe	Val	Phe	Gly	Gly	Val	Pro	225	230	235
Ile	Phe	Tyr	Thr	Pro	Trp	Ala	Asp	Phe	Pro	Leu	Asp	Gly	Asn	Arg	Lys	245	250	255
Ser	Gly	Leu	Leu	Val	Pro	Ser	Leu	Ser	Ala	Gly	Ser	Asp	Gly	Val	Ser	260	265	270
Leu	Ser	Val	Pro	Tyr	Tyr	Phe	Asn	Leu	Ala	Pro	Asn	Leu	Asp	Ala	Thr	275	280	285
Phe	Ala	Pro	Gly	Val	Ile	Gly	Glu	Arg	Gly	Ala	Val	Phe	Asp	Gly	Gln	290	295	300
Val	Arg	Tyr	Leu	Arg	Pro	Asp	Tyr	Ala	Gly	Gln	Ser	Asp	Leu	Thr	Trp	305	310	315
Leu	Pro	His	Asp	Lys	Lys	Ser	Gly	Arg	Asn	Asn	Arg	Tyr	Gln	Ala	Lys	325	330	335
Trp	Gln	His	Arg	His	Asp	Ile	Ser	Asp	Thr	Leu	Gln	Ala	Gly	Val	Asp	340	345	350
Phe	Asn	Gln	Val	Ser	Asp	Ser	Gly	Tyr	Tyr	Arg	Asp	Phe	Tyr	Gly	Asn	355	360	365
Lys	Glu	Ile	Ala	Gly	Asn	Val	Asn	Leu	Asn	Arg	Arg	Val	Trp	Leu	Asp	370	375	380
Tyr	Gly	Gly	Arg	Ala	Ala	Gly	Gly	Ser	Leu	Asn	Ala	Gly	Leu	Ser	Val	385	390	395
Leu	Lys	Tyr	Gln	Thr	Leu	Ala	Asn	Gln	Ser	Gly	Tyr	Lys	Asp	Lys	Pro	405	410	415
Tyr	Ala	Leu	Met	Pro	Arg	Leu	Ser	Ala	Asp	Trp	Arg	Lys	Asn	Thr	Gly	420	425	430
Arg	Ala	Gln	Ile	Gly	Val	Ser	Ala	Gln	Phe	Thr	Arg	Phe	Ser	His	Asp	435	440	445
Ser	Arg	Gln	Asp	Gly	Ser	Arg	Leu	Val	Val	Tyr	Pro	Asp	Ile	Lys	Trp	450	455	460
Asp	Phe	Ser	Asn	Ser	Trp	Gly	Tyr	Val	Arg	Pro	Lys	Leu	Gly	Leu	His	465	470	475
Ala	Thr	Tyr	Tyr	Ser	Leu	Asn	Arg	Phe	Gly	Ser	Gln	Glu	Ala	Arg	Arg	485	490	495

Val	Ser	Arg	Thr	Leu	Pro	Ile	Val	Asn	Ile	Asp	Ser	Gly	Met	Thr	Phe	500	505	510
Glu	Arg	Asn	Thr	Arg	Met	Phe	Gly	Gly	Gly	Val	Leu	Gln	Thr	Leu	Glu	515	520	525
Pro	Arg	Leu	Phe	Tyr	Asn	Tyr	Ile	Pro	Ala	Lys	Ser	Gln	Asn	Asp	Leu	530	535	540
Pro	Asn	Phe	Asp	Ser	Ser	Glu	Ser	Ser	Phe	Gly	Tyr	Gly	Gln	Leu	Phe	545	550	555
Arg	Glu	Asn	Leu	Tyr	Tyr	Gly	Asn	Asp	Arg	Ile	Asn	Thr	Ala	Asn	Ser	565	570	575
Leu	Ser	Ala	Ala	Val	Gln	Ser	Arg	Ile	Leu	Asp	Gly	Ala	Thr	Gly	Glu	580	585	590
Glu	Arg	Phe	Arg	Ala	Gly	Ile	Gly	Gln	Lys	Phe	Tyr	Phe	Lys	Asn	Asp	595	600	605
Ala	Val	Met	Leu	Asp	Gly	Ser	Val	Gly	Lys	Lys	Pro	Arg	Ser	Arg	Ser	610	615	620
Asp	Trp	Val	Ala	Phe	Ala	Ser	Ser	Gly	Ile	Gly	Ser	Arg	Phe	Ile	Leu	625	630	635
Asp	Ser	Ser	Ile	His	Tyr	Asn	Gln	Asn	Asp	Lys	Arg	Ala	Glu	Asn	Tyr	645	650	655
Ala	Val	Gly	Ala	Ser	Tyr	Arg	Pro	Ala	Gln	Gly	Lys	Val	Leu	Asn	Ala	660	665	670
Arg	Tyr	Lys	Tyr	Gly	Arg	Asn	Glu	Lys	Ile	Tyr	Leu	Lys	Ser	Asp	Gly	675	680	685
Ser	Tyr	Phe	Tyr	Asp	Lys	Leu	Ser	Gln	Leu	Asp	Leu	Ser	Ala	Gln	Trp	690	695	700
Pro	Leu	Thr	Arg	Asn	Leu	Ser	Ala	Val	Val	Arg	Tyr	Asn	Tyr	Gly	Phe	705	710	715
Glu	Ala	Lys	Lys	Pro	Ile	Glu	Val	Leu	Ala	Gly	Ala	Glu	Tyr	Lys	Ser	725	730	735
Ser	Cys	Gly	Cys	Trp	Gly	Ala	Gly	Val	Tyr	Ala	Gln	Arg	Tyr	Val	Thr	740	745	750
Gly	Glu	Asn	Thr	Tyr	Lys	Asn	Ala	Val	Phe	Phe	Ser	Leu	Gln	Leu	Lys	755	760	765
Asp	Leu	Ser	Ser	Val	Gly	Arg	Asn	Pro	Ala	Asp	Arg	Met	Asp	Val	Ala	770	775	780
Val	Pro	Gly	Tyr	Ile	Pro	Ala	His	Ser	Leu	Ser	Ala	Gly	Arg	Asn	Lys	785	790	795
																800		

Arg Pro

<210> 2935

<211> 327

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 2935

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atgaacatca aacaccttct cttgaccgcc gccgcaaccg cactggttggg catttccgcc 60
cccgactcg cccaccacga cggacacggc gatgacgacc acggacacgc cgcacaccaa 120
cacggcaaac aagacaaaat catcagccgc gcccaagccg aaaaagcggc ttgggcgcgt 180
gtcggcggca aaatcaccga catcgatctc gaacacgacg acggccgtcc gcactatgat 240
gtcgaaatcg tcaaaaacgg acaggaatac aaagtcgttg tcgatgcccg taccggccgc 300
gtgatttctt cccgccgcga cgactga 327
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<210> 2936

<211> 108

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 2936

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Met Asn Ile Lys His Leu Leu Leu Thr Ala Ala Ala Thr Ala Leu Leu
  1              5              10              15

Gly Ile Ser Ala Pro Ala Leu Ala His His Asp Gly His Gly Asp Asp
          20              25              30

Asp His Gly His Ala Ala His Gln His Gly Lys Gln Asp Lys Ile Ile
      35              40              45

Ser Arg Ala Gln Ala Glu Lys Ala Ala Trp Ala Arg Val Gly Gly Lys
      50              55              60

Ile Thr Asp Ile Asp Leu Glu His Asp Asp Gly Arg Pro His Tyr Asp
      65              70              75              80

Val Glu Ile Val Lys Asn Gly Gln Glu Tyr Lys Val Val Val Asp Ala
          85              90              95

Arg Thr Gly Arg Val Ile Ser Ser Arg Arg Asp Asp
      100              105
```

<210> 2937

<211> 327

<212> DNA

<213> *Neisseria meningitidis*

<400> 2937

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cccgcgctcg cccaccacga cggacacggc gatgacgacc acggacacgc cgcacaccaa 120
cacaacaaac aagacaaaat catcagccgc gcccaagccg aaaaagcagc gttggcgcgt 180
gtcggcggca aaatcaccga catcgatctc gaacacgaca acggccgtcc gcactatgat 240
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gtcgaaatcg tcaaaaacgg acaggaatac aaagtcgttg tcgatgcccg taccggccgc 300
 gtgatttcct cccgccgcga cgactga 327

<210> 2938
 <211> 108
 <212> PRT
 <213> Neisseria meningitidis

<400> 2938
 Met Asn Ile Lys His Leu Leu Leu Thr Ser Ala Ala Thr Ala Leu Leu
 1 5 10 15
 Ser Ile Ser Ala Pro Ala Leu Ala His His Asp Gly His Gly Asp Asp
 20 25 30
 Asp His Gly His Ala Ala His Gln His Asn Lys Gln Asp Lys Ile Ile
 35 40 45
 Ser Arg Ala Gln Ala Glu Lys Ala Ala Leu Ala Arg Val Gly Gly Lys
 50 55 60
 Ile Thr Asp Ile Asp Leu Glu His Asp Asn Gly Arg Pro His Tyr Asp
 65 70 75 80
 Val Glu Ile Val Lys Asn Gly Gln Glu Tyr Lys Val Val Val Asp Ala
 85 90 95
 Arg Thr Gly Arg Val Ile Ser Ser Arg Arg Asp Asp
 100 105

<210> 2939
 <211> 327
 <212> DNA
 <213> Neisseria meningitidis

<400> 2939
 atgaacttca aacgccttct cttgaccgcc gccgcaaccg cactgatggg catttccgcc 60
 cccgcactcg cccaccacga cggacacggc gatgacgacc acggacacgc cgcacaccaa 120
 cacagcaaac aagacaaaat catcagccgc gcccaagccg aaaaagcagc gttggcgcg 180
 gtcggcgggca aaatcacgga catcgatctc gaacacgaca acggccgtcc gcactatgat 240
 gtcgaaatcg tcaaaaacgg acaggaatac aaagtcgttg tcgatgcccg taccggccgc 300
 gtgatttcct cccgccgcga cgactga 327

<210> 2940
 <211> 108
 <212> PRT
 <213> Neisseria meningitidis

<400> 2940
 Met Asn Phe Lys Arg Leu Leu Leu Thr Ala Ala Ala Thr Ala Leu Met
 1 5 10 15
 Gly Ile Ser Ala Pro Ala Leu Ala His His Asp Gly His Gly Asp Asp
 20 25 30

Asp His Gly His Ala Ala His Gln His Ser Lys Gln Asp Lys Ile Ile
 35 40 45
 Ser Arg Ala Gln Ala Glu Lys Ala Ala Leu Ala Arg Val Gly Gly Lys
 50 55 60
 Ile Thr Asp Ile Asp Leu Glu His Asp Asn Gly Arg Pro His Tyr Asp
 65 70 75 80
 Val Glu Ile Val Lys Asn Gly Gln Glu Tyr Lys Val Val Val Asp Ala
 85 90 95
 Arg Thr Gly Arg Val Ile Ser Ser Arg Arg Asp Asp
 100 105

<210> 2941
 <211> 1623
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2941
 atgcaagtaa atattcagat tccctgtatg ctgtacagac gcgggagtggt taagcccccc 60
 ttgtttgaag ctccgcggct cctgccgagc ttcaccgacc ccgttgtgcc caagctctct 120
 gctcccggcg gctacattgt cgacatcccc aaaggcaatc tgaaaaccga aatcgaaaag 180
 ctggccaaac agcccagagta tgcctatctg aaacagctcc aagtagcgaa aaacgtcaac 240
 tggaaccagg tgcaactggc ttacgataaa tgggactata agcaggaagg ctttaaccaga 300
 gccggtgcag cgattatcgc gctggctgtt accgtgggta ctgcgggcgc gggagtcgga 360
 gccgcactag gcttaaacgg cgagccgca gcagcggccg atgccgcctt tgcctcactc 420
 gcttctcagg cttccgtatc gctcatcaac aataaaggcg atgtcggcaa aaccctgaag 480
 gaactgggca gaagccgcac ggtaaaaaat ctgggtgtag cggcggcaac ggcaggcgta 540
 tccaacaaac tcgggtgcctc ttcccttgcc acttgagcgc aaacccttg ggtaaacaac 600
 ctcaacgtta acctggccaa tgcgggcagt gccgcgctga tcaacaccgc tgtaaacggc 660
 ggcagcctga aagacaatct ggaggcaaat atcctggcgg cattggtgaa taccgcgcgt 720
 ggggagggcg cgagtaagat caaaggactg gatcagcact atgtcgcca caaatcgct 780
 catgccgtag cgggctgtgc ggctgcagcg gcgaataagg gcaaatgtca ggacggcgcg 840
 atcgggtcgg ctgtgggtga gattgtcggg gaggctttgg ttaaaaatac cgattttagc 900
 gatatgaccc cggaacaatt agatctggaa gttaagaaaa ttaccgccta tgccaaactt 960
 gcggcaggta cagttgcagg cgtaacggga ggagatgtca atactgctgc acaaaccgca 1020
 caaaacgcgg tagaaaataa tgcgggttaa gctgttgtaa ctgctgcaaa agtggtttat 1080
 aaggtagcca gaaaaggatt aaaaaacggg aaatcaacg ttagagattt aaaacagacg 1140
 ttgaaagacg aaggttataa tttagccgac aacctgacca cttatttcga cgaaacattg 1200
 gattggaacg atgccaaagc cgttattgat attgtcgtcg gaacagagct gaatcgcgct 1260
 aataaagggg aagcggcaca aaagggtcaag gaagtttttag aaaaaaatcg tccttatatc 1320
 cctaataaag gtgctgtacc gaatatgagt acatacatga aaaataatcc ttttgaaaa 1380
 cagctggctc aaatttcaga aaagacaacg cttccgacgc agcaagggca gtctgtcttc 1440
 ttggtaaaaa gaaaccaagg gttattaaaa accggtgata ggttttatct agatggccaa 1500
 cataaaaatc atttagaggt ttttgataaa aatgggaact ttaagtttgt tctaaatatg 1560
 gatggttcgc ttaaccaaatt gaaaactggg gcagcaaaag gtcgtaaat aaacttaaaa 1620
 tag 1623

<210> 2942
 <211> 540
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2942

Met	Gln	Val	Asn	Ile	Gln	Ile	Pro	Cys	Met	Leu	Tyr	Arg	Arg	Gly	Ser	
1				5					10					15		
Val	Lys	Pro	Pro	Leu	Phe	Glu	Ala	Pro	Arg	Leu	Leu	Pro	Ser	Phe	Thr	
			20					25					30			
Asp	Pro	Val	Val	Pro	Lys	Leu	Ser	Ala	Pro	Gly	Gly	Tyr	Ile	Val	Asp	
		35					40					45				
Ile	Pro	Lys	Gly	Asn	Leu	Lys	Thr	Glu	Ile	Glu	Lys	Leu	Ala	Lys	Gln	
	50					55					60					
Pro	Glu	Tyr	Ala	Tyr	Leu	Lys	Gln	Leu	Gln	Val	Ala	Lys	Asn	Val	Asn	
65					70					75					80	
Trp	Asn	Gln	Val	Gln	Leu	Ala	Tyr	Asp	Lys	Trp	Asp	Tyr	Lys	Gln	Glu	
				85					90					95		
Gly	Leu	Thr	Arg	Ala	Gly	Ala	Ala	Ile	Ile	Ala	Leu	Ala	Val	Thr	Val	
			100					105					110			
Val	Thr	Ala	Gly	Ala	Gly	Val	Gly	Ala	Ala	Leu	Gly	Leu	Asn	Gly	Ala	
		115					120					125				
Ala	Ala	Ala	Ala	Ala	Asp	Ala	Ala	Phe	Ala	Ser	Leu	Ala	Ser	Gln	Ala	
	130					135					140					
Ser	Val	Ser	Leu	Ile	Asn	Asn	Lys	Gly	Asp	Val	Gly	Lys	Thr	Leu	Lys	
145					150					155					160	
Glu	Leu	Gly	Arg	Ser	Arg	Thr	Val	Lys	Asn	Leu	Val	Val	Ala	Ala	Ala	
				165					170					175		
Thr	Ala	Gly	Val	Ser	Asn	Lys	Leu	Gly	Ala	Ser	Ser	Leu	Ala	Thr	Trp	
		180						185					190			
Ser	Glu	Thr	Pro	Trp	Val	Asn	Asn	Leu	Asn	Val	Asn	Leu	Ala	Asn	Ala	
		195					200					205				
Gly	Ser	Ala	Ala	Leu	Ile	Asn	Thr	Ala	Val	Asn	Gly	Gly	Ser	Leu	Lys	
	210					215					220					
Asp	Asn	Leu	Glu	Ala	Asn	Ile	Leu	Ala	Ala	Leu	Val	Asn	Thr	Ala	His	
225					230					235					240	
Gly	Glu	Ala	Ala	Ser	Lys	Ile	Lys	Gly	Leu	Asp	Gln	His	Tyr	Val	Ala	
				245					250					255		
His	Lys	Ile	Ala	His	Ala	Val	Ala	Gly	Cys	Ala	Ala	Ala	Ala	Ala	Asn	
		260						265					270			
Lys	Gly	Lys	Cys	Gln	Asp	Gly	Ala	Ile	Gly	Ala	Ala	Val	Gly	Glu	Ile	
	275						280					285				
Val	Gly	Glu	Ala	Leu	Val	Lys	Asn	Thr	Asp	Phe	Ser	Asp	Met	Thr	Pro	

290	295	300
Glu Gln Leu Asp Leu Glu Val Lys Lys Ile Thr Ala Tyr Ala Lys Leu 305 310 315 320		
Ala Ala Gly Thr Val Ala Gly Val Thr Gly Gly Asp Val Asn Thr Ala 325 330 335		
Ala Gln Thr Ala Gln Asn Ala Val Glu Asn Asn Ala Val Lys Ala Val 340 345 350		
Val Thr Ala Ala Lys Val Val Tyr Lys Val Ala Arg Lys Gly Leu Lys 355 360 365		
Asn Gly Lys Ile Asn Val Arg Asp Leu Lys Gln Thr Leu Lys Asp Glu 370 375 380		
Gly Tyr Asn Leu Ala Asp Asn Leu Thr Thr Leu Phe Asp Glu Thr Leu 385 390 395 400		
Asp Trp Asn Asp Ala Lys Ala Val Ile Asp Ile Val Val Gly Thr Glu 405 410 415		
Leu Asn Arg Ala Asn Lys Gly Glu Ala Ala Gln Lys Val Lys Glu Val 420 425 430		
Leu Glu Lys Asn Arg Pro Tyr Ile Pro Asn Lys Gly Ala Val Pro Asn 435 440 445		
Met Ser Thr Tyr Met Lys Asn Asn Pro Phe Gly Lys Gln Leu Ala Gln 450 455 460		
Ile Ser Glu Lys Thr Thr Leu Pro Thr Gln Gln Gly Gln Ser Val Phe 465 470 475 480		
Leu Val Lys Arg Asn Gln Gly Leu Leu Lys Thr Gly Asp Arg Phe Tyr 485 490 495		
Leu Asp Gly Gln His Lys Asn His Leu Glu Val Phe Asp Lys Asn Gly 500 505 510		
Asn Phe Lys Phe Val Leu Asn Met Asp Gly Ser Leu Asn Gln Met Lys 515 520 525		
Thr Gly Ala Ala Lys Gly Arg Lys Leu Asn Leu Lys 530 535 540		

<210> 2943

<211> 1095

<212> DNA

<213> Neisseria meningitidis

<400> 2943

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atgagcatga aacactttcc agccaaagta ctgaccacag ccataccttgc cactttctgt 60
agcggcgcac tggcagccac aagcgacgac gatgttaaaa aagctgccac tgtggccatt 120
gttgctgcct acaacaatgg ccaagaaatc aacggtttca aagctggaga gaccatctac 180

```

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gacattggtg aagacggcac aattacccaa aaagacgcaa ctgcagccga tgttgaagcc 240
gacgacttta aaggtctggg tctgaaaaaa gtcgtgacta acctgaccaa aaccgtcaat 300
gaaaacaaac aaaacgtcga tgccaaagta aaagctgcag aatctgaaat agaaaagtta 360
acaaccaagt tagcagacac tgatgccgt ttagcagata ctgatgccgc tctggatgaa 420
accaccaacg ccttgaataa attgggagaa aatataacga catttgctga agagactaag 480
acaaatatcg taaaaattga tgaaaaatta gaagccgtgg ctgataccgt cgacaagcat 540
gccgaagcat tcaacgatat cgccgattca ttggatgaaa ccaacactaa ggcagacgaa 600
gccgtcaaaa ccgccaatga agccaaacag acggccgaag aaaccaaaca aaacgtcgat 660
gccaaagtaa aagctgcaga aactgcagca ggcaaagccg aagctgccgc tggcacagct 720
aatactgcag ccgacaaggc cgaagctgtc gctgcaaaag ttaccgacat caaagctgat 780
atcgctacga acaaagctga tattgctaaa aactcagcac gcacgcagag cttggacaaa 840
aacgtagcta atctgcgcaa agaaacccgc caaggccttg cagaacaagc cgcgctctcc 900
ggcctgttcc aaccttaciaa cgtgggtcgg ttcaatgtaa cggctgcagt cggcggctac 960
aaatccgaat cggcagtcgc catcggtagc ggcttccgct ttaccgaaaa ctttgccgcc 1020
aaagcaggcg tggcagtcgg caattcgtcc ggttcttccg cagcctacca tgtcggcgctc 1080
aattacgagt ggtaa 1095

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<210> 2944

<211> 364

<212> PRT

<213> Neisseria meningitidis

<400> 2944

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Met Ser Met Lys His Phe Pro Ala Lys Val Leu Thr Thr Ala Ile Leu
  1                      5                      10                      15

Ala Thr Phe Cys Ser Gly Ala Leu Ala Ala Thr Ser Asp Asp Asp Val
          20                      25                      30

Lys Lys Ala Ala Thr Val Ala Ile Val Ala Ala Tyr Asn Asn Gly Gln
  35                      40                      45

Glu Ile Asn Gly Phe Lys Ala Gly Glu Thr Ile Tyr Asp Ile Gly Glu
  50                      55                      60

Asp Gly Thr Ile Thr Gln Lys Asp Ala Thr Ala Ala Asp Val Glu Ala
  65                      70                      75                      80

Asp Asp Phe Lys Gly Leu Gly Leu Lys Lys Val Val Thr Asn Leu Thr
          85                      90                      95

Lys Thr Val Asn Glu Asn Lys Gln Asn Val Asp Ala Lys Val Lys Ala
  100                      105                      110

Ala Glu Ser Glu Ile Glu Lys Leu Thr Thr Lys Leu Ala Asp Thr Asp
  115                      120                      125

Ala Ala Leu Ala Asp Thr Asp Ala Ala Leu Asp Glu Thr Thr Asn Ala
  130                      135                      140

Leu Asn Lys Leu Gly Glu Asn Ile Thr Thr Phe Ala Glu Glu Thr Lys
  145                      150                      155                      160

Thr Asn Ile Val Lys Ile Asp Glu Lys Leu Glu Ala Val Ala Asp Thr
          165                      170                      175

```

Val Asp Lys His Ala Glu Ala Phe Asn Asp Ile Ala Asp Ser Leu Asp
 180 185 190
 Glu Thr Asn Thr Lys Ala Asp Glu Ala Val Lys Thr Ala Asn Glu Ala
 195 200 205
 Lys Gln Thr Ala Glu Glu Thr Lys Gln Asn Val Asp Ala Lys Val Lys
 210 215 220
 Ala Ala Glu Thr Ala Ala Gly Lys Ala Glu Ala Ala Ala Gly Thr Ala
 225 230 235 240
 Asn Thr Ala Ala Asp Lys Ala Glu Ala Val Ala Ala Lys Val Thr Asp
 245 250 255
 Ile Lys Ala Asp Ile Ala Thr Asn Lys Ala Asp Ile Ala Lys Asn Ser
 260 265 270
 Ala Arg Ile Asp Ser Leu Asp Lys Asn Val Ala Asn Leu Arg Lys Glu
 275 280 285
 Thr Arg Gln Gly Leu Ala Glu Gln Ala Ala Leu Ser Gly Leu Phe Gln
 290 295 300
 Pro Tyr Asn Val Gly Arg Phe Asn Val Thr Ala Ala Val Gly Gly Tyr
 305 310 315 320
 Lys Ser Glu Ser Ala Val Ala Ile Gly Thr Gly Phe Arg Phe Thr Glu
 325 330 335
 Asn Phe Ala Ala Lys Ala Gly Val Ala Val Gly Thr Ser Ser Gly Ser
 340 345 350
 Ser Ala Ala Tyr His Val Gly Val Asn Tyr Glu Trp
 355 360

<210> 2945

<211> 1269

<212> DNA

<213> Neisseria meningitidis

<400> 2945

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 cagcgaagag gtaagcaaga cggggttttt gttgattgga ttccattcac attccatgaa 180
 gatactttac tgaaagtttc cggttgccct ttattttctg atgctgaata catgtatgta 240
 ttaagcagaa agctggaaga aattctaggt tttggcataa cgcgcaaatg caaatcaagg 300
 ggcaacaaat tctatgaatc catgtatagg ttaggttcgg atgatgttga ttatggagag 360
 gtgcatttcg gargtcagcg caatactgtt ttagttgagt tgaaaggtag tggttgcagc 420
 gttgcaagtc cgggttgga gttgaggcta aagcagtttc tcgatgattc gataaggaca 480
 agaataacgc gaattgacct agcacttgat ttttttgatg gagagtacac gccggatcag 540
 gcgttgtag atcacgataa tggttttttt gataacagca atcaaaggcc gaaatctgaa 600
 acgatcggta cggcttgccg gaatgaggac gggagcggca agacatttta tgtaggtcgc 660
 aagaaaaatt ctctgtttgt tcgtgtttat gagaaaggca ggcagcttgg agataaagaa 720
 agcaaatggg taaggttcga gatccagttt aattatggag atatagaaat acccttggat 780

```

attttaataa atcaggggttc gtatttctgt ggagcttttc caatttgtag aaaatttaaa 840
aatatgccgg tttccgaaag gtttgatcag agaaaagaaa agcttaattt aactttcgag 900
cataaattgc attacgcgaa aaacgcggtt ggaaaactgg tcaatttcat gattgaaatg 960
ggttttgata atagcgaaat tgtggaatct ttaaaggcag attcgggatt tcccaaagga 1020
ttagaacctg aaaaatatgc tctggaaatg ttaagggacg gtttgaaaca cggttttatt 1080
catgaacagc cggatattga ttgggaaatt gaacttgatg aattgggggt tattgctttt 1140
aaaaattctg acaaattcga tagggaaaaa aggcitttta gtcctgatta tgatgtcgag 1200
aaagaaagga aatatcagga atatttaagt aaagtttatc atcaaaatgt agattatgat 1260
tatttttaa                                     1269

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<210> 2946

<211> 422

<212> PRT

<213> *Neisseria meningitidis*

<400> 2946

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Leu Thr Asn Arg Gly Gly Ala Lys Leu Lys Thr Xaa Ser Lys Ser Ser
  1              5              10              15

Glu Arg Met Ser Glu Val Glu Tyr Phe Ser His Phe Ile Ser Asp Gly
      20              25              30

Lys Gly Lys Leu Leu Glu Ile Pro Gln Arg Arg Gly Lys Gln Asp Gly
      35              40              45

Val Phe Val Asp Trp Ile Ser Phe Thr Phe His Glu Asp Thr Leu Leu
      50              55              60

Lys Val Ser Gly Cys Pro Leu Phe Ser Asp Ala Glu Tyr Met Tyr Val
      65              70              75              80

Leu Ser Arg Lys Leu Glu Glu Ile Leu Gly Phe Gly Ile Thr Arg Lys
      85              90              95

Cys Lys Ser Arg Gly Asn Lys Phe Tyr Glu Ser Met Tyr Arg Leu Gly
      100             105             110

Ser Asp Asp Val Asp Tyr Gly Glu Val His Phe Gly Xaa Gln Arg Asn
      115             120             125

Thr Val Leu Val Glu Leu Lys Gly Thr Gly Cys Ser Val Ala Ser Pro
      130             135             140

Gly Trp Glu Leu Arg Leu Lys Gln Phe Leu Asp Asp Ser Ile Arg Thr
      145             150             155             160

Arg Ile Thr Arg Ile Asp Leu Ala Leu Asp Phe Phe Asp Gly Glu Tyr
      165             170             175

Thr Pro Asp Gln Ala Leu Leu Asp His Asp Asn Gly Phe Phe Asp Asn
      180             185             190

Ser Asn Gln Arg Pro Lys Ser Glu Thr Ile Gly Thr Ala Trp Arg Asn
      195             200             205

Glu Asp Gly Ser Gly Lys Thr Phe Tyr Val Gly Arg Lys Lys Asn Ser

```

210	215	220
Arg Phe Val Arg Val Tyr Glu Lys Gly Arg Gln Leu Gly Asp Lys Glu		
225	230	235 240
Ser Lys Trp Val Arg Phe Glu Ile Gln Phe Asn Tyr Gly Asp Ile Glu		
	245	250 255
Ile Pro Leu Asp Ile Leu Ile Asn Gln Gly Ser Tyr Phe Cys Gly Ala		
	260	265 270
Phe Pro Ile Cys Arg Lys Phe Lys Asn Met Pro Val Pro Glu Arg Phe		
	275	280 285
Asp Gln Arg Lys Lys Lys Leu Asn Leu Thr Phe Glu His Lys Leu His		
	290	295 300
Tyr Ala Lys Asn Ala Val Gly Lys Leu Val Asn Phe Met Ile Glu Met		
305	310	315 320
Gly Phe Asp Asn Ser Glu Ile Val Glu Ser Leu Lys Ala Asp Ser Gly		
	325	330 335
Phe Pro Lys Gly Leu Glu Pro Glu Lys Tyr Ala Leu Glu Met Leu Arg		
	340	345 350
Asp Gly Leu Lys His Gly Phe Ile His Glu Gln Pro Asp Ile Asp Leu		
	355	360 365
Glu Ile Glu Leu Asp Glu Leu Gly Val Ile Ala Phe Lys Asn Ser Asp		
370	375	380
Lys Phe Asp Arg Glu Lys Arg Leu Phe Ser Pro Asp Tyr Asp Val Glu		
385	390	395 400
Lys Glu Arg Lys Tyr Gln Glu Tyr Leu Ser Lys Val Tyr His Gln Asn		
	405	410 415
Val Asp Tyr Asp Tyr Phe		
	420	

<210> 2947

<211> 1269

<212> DNA

<213> Neisseria meningitidis

<400> 2947

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cagcgaagag gtaagcaaga cggggttttt gttgattgga ttccattcac attccatgaa 180
gatactttac tgaaagtttc cggttgccct ttattttctg atgctgaata catgtatgta 240
ttaagcagaa agctggaaga aattctaggt ttggcataa cgcgcaaagt caaatcaagg 300
ggcaacaaat tctatgaatc catgtatagg ttaggttcgg atgatgttga ttatggagag 360
gtgcatttcg gaggtcagcg caatactgtt ttagttgagt tgaaaggtagc tggttgcagc 420
gttgcaagtc cgggttgga gttgaggcta aagcagtttc tcgatgattc gataaggaca 480
agaataacgc gaattgacct agcacttgat ttttttgatg gagagtacac gccggatcag 540

```

```

gcgttgtag atcacgataa tgggtttttt gataacagca atcaaaggcc gaaatctgaa 600
acgatcggta cggcttggcg gaatgaggac gggagcggca agacatttta ttaggtcgc 660
aagaaaaatt ctggttttgt tcgtgtttat gagaaaggca ggcagcttgg agataaagaa 720
agcaaatggg taaggttcga gatccagttt aattatggag atatagaaat acccttggat 780
attttaataa atcagggttc gtatttctgt ggagcttttc caattttagt aaaatttaaa 840
aatatgccgg ttcccgaag gtttgatcag agaaagaaaa cgcttaattt aactttcgag 900
cataaattgc attacgcgaa aaacgcggtt ggaaaactgg tcaatttcat gattgaaatg 960
ggttttgata atagcgaaat tgtggaatct ttaaaggcag attcgggatt tcccaaagga 1020
ttagaacctg aaaaatatgc tctggaaatg ttaagggacg gtttgaaaca cggttttatt 1080
catgaacagc cggatattga tttggaaatt gaacttgatg aattgggggt tattgctttt 1140
aaaaattctg acaaattcga tagggaaaaa aggtttttta gtcctgatta tgatgtcgag 1200
aaagaaagga aatatcagga atatttaagt aaagtttatc atcaaaatgt agattatgat 1260
tatttttaa                                     1269

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<210> 2948

<211> 422

<212> PRT

<213> Neisseria meningitidis

<400> 2948

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Leu Thr Asn Arg Gly Gly Ala Lys Leu Lys Thr Asn Ser Lys Ser Ser
  1                      5                      10          15

```

```

Glu Arg Met Ser Glu Val Glu Tyr Phe Ser His Phe Ile Ser Asp Gly
          20                      25          30

```

```

Lys Gly Lys Leu Leu Glu Ile Pro Gln Arg Arg Gly Lys Gln Asp Gly
          35                      40          45

```

```

Val Phe Val Asp Trp Ile Ser Phe Thr Phe His Glu Asp Thr Leu Leu
          50                      55          60

```

```

Lys Val Ser Gly Cys Pro Leu Phe Ser Asp Ala Glu Tyr Met Tyr Val
          65                      70          75          80

```

```

Leu Ser Arg Lys Leu Glu Glu Ile Leu Gly Phe Gly Ile Thr Arg Lys
          85                      90          95

```

```

Cys Lys Ser Arg Gly Asn Lys Phe Tyr Glu Ser Met Tyr Arg Leu Gly
          100                     105          110

```

```

Ser Asp Asp Val Asp Tyr Gly Glu Val His Phe Gly Gly Gln Arg Asn
          115                     120          125

```

```

Thr Val Leu Val Glu Leu Lys Gly Thr Gly Cys Ser Val Ala Ser Pro
          130                     135          140

```

```

Gly Trp Glu Leu Arg Leu Lys Gln Phe Leu Asp Asp Ser Ile Arg Thr
          145                     150          155          160

```

```

Arg Ile Thr Arg Ile Asp Leu Ala Leu Asp Phe Phe Asp Gly Glu Tyr
          165                     170          175

```

```

Thr Pro Asp Gln Ala Leu Leu Asp His Asp Asn Gly Phe Phe Asp Asn
          180                     185          190

```

Ser Asn Gln Arg Pro Lys Ser Glu Thr Ile Gly Thr Ala Trp Arg Asn
 195 200 205
 Glu Asp Gly Ser Gly Lys Thr Phe Tyr Val Gly Arg Lys Lys Asn Ser
 210 215 220
 Arg Phe Val Arg Val Tyr Glu Lys Gly Arg Gln Leu Gly Asp Lys Glu
 225 230 235 240
 Ser Lys Trp Val Arg Phe Glu Ile Gln Phe Asn Tyr Gly Asp Ile Glu
 245 250 255
 Ile Pro Leu Asp Ile Leu Ile Asn Gln Gly Ser Tyr Phe Cys Gly Ala
 260 265 270
 Phe Pro Ile Cys Arg Lys Phe Lys Asn Met Pro Val Pro Glu Arg Phe
 275 280 285
 Asp Gln Arg Lys Lys Thr Leu Asn Leu Thr Phe Glu His Lys Leu His
 290 295 300
 Tyr Ala Lys Asn Ala Val Gly Lys Leu Val Asn Phe Met Ile Glu Met
 305 310 315 320
 Gly Phe Asp Asn Ser Glu Ile Val Glu Ser Leu Lys Ala Asp Ser Gly
 325 330 335
 Phe Pro Lys Gly Leu Glu Pro Glu Lys Tyr Ala Leu Glu Met Leu Arg
 340 345 350
 Asp Gly Leu Lys His Gly Phe Ile His Glu Gln Pro Asp Ile Asp Leu
 355 360 365
 Glu Ile Glu Leu Asp Glu Leu Gly Val Ile Ala Phe Lys Asn Ser Asp
 370 375 380
 Lys Phe Asp Arg Glu Lys Arg Leu Phe Ser Pro Asp Tyr Asp Val Glu
 385 390 395 400
 Lys Glu Arg Lys Tyr Gln Glu Tyr Leu Ser Lys Val Tyr His Gln Asn
 405 410 415
 Val Asp Tyr Asp Tyr Phe
 420

<210> 2949
 <211> 863
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2949
 atggacggcg cacaaccgaa aacaaatttt tttgaacgcc tgattgcccg actcgccgcg 60
 gaaccggatt ccgccgaaga cgtattaaac ctgcttcggc aggcgcacga acaggaagtt 120
 tttgatgccg acacactgac ccggctggaa aaagtattgg actttgccga gctggaagtg 180
 cgcgatgcga tgattacgcg cagccgcgatg aacgtattga aagaaaacga cagcatcgaa 240

```

cgcatcaccg cctacgtcat cgataaccgcc cattcgcgct tccccgtcat cggcgaagac 300
aaagacgaag ttttgggcat tttgcacgcc aaagacctgc tcaaataat gttcaacccc 360
gagcagttcc acctgaaatc cgtcttgccg cctgccgttt tcgtgcccga aggcaaattc 420
ttgaccgccc ttttaaaaga gttccgcgaa cagcgcaacc atatggcaat cgtcacgcac 480
gaatacggcg gcacgtcggg tttggtcacc tttgaagaca tcacgcagca aatcgtcggg 540
gacatcgaag acgagtttga cgaagacgaa agcgcgcgac acatccactc cgtttccgcc 600
gaacgctggc gcatccacgc ggctaccgaa atcgaagaca tcaacgcctt tttcggtagc 660
gaatacggca gcgaagaagc cgacaccatc ggcggttgg tcattcagga attgggacac 720
ctgcccgtgc gcggcgaaaa agtccttacc ggcggttgc agttcacctc cgcccgcgcc 780
gacaaccgcc gctgcacac gctgatggcg acccgcgtag agtaagcaga gcctgcccgc 840
accgccgttt ctgcacagtt tag 863

```

<210> 2950

<211> 274

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2950

```

Met Asp Gly Ala Gln Pro Lys Thr Asn Phe Phe Glu Arg Leu Ile Ala
  1              5              10              15

```

```

Arg Leu Ala Arg Glu Pro Asp Ser Ala Glu Asp Val Leu Asn Leu Leu
          20              25              30

```

```

Arg Gln Ala His Glu Gln Glu Val Phe Asp Ala Asp Thr Leu Thr Arg
          35              40              45

```

```

Leu Glu Lys Val Leu Asp Phe Ala Glu Leu Glu Val Arg Asp Ala Met
          50              55              60

```

```

Ile Thr Arg Ser Arg Met Asn Val Leu Lys Glu Asn Asp Ser Ile Glu
          65              70              75              80

```

```

Arg Ile Thr Ala Tyr Val Ile Asp Thr Ala His Ser Arg Phe Pro Val
          85              90              95

```

```

Ile Gly Glu Asp Lys Asp Glu Val Leu Gly Ile Leu His Ala Lys Asp
          100              105              110

```

```

Leu Leu Lys Tyr Met Phe Asn Pro Glu Gln Phe His Leu Lys Ser Val
          115              120              125

```

```

Leu Arg Pro Ala Val Phe Val Pro Glu Gly Lys Ser Leu Thr Ala Leu
          130              135              140

```

```

Leu Lys Glu Phe Arg Glu Gln Arg Asn His Met Ala Ile Val Ile Asp
          145              150              155              160

```

```

Glu Tyr Gly Gly Thr Ser Gly Leu Val Thr Phe Glu Asp Ile Ile Glu
          165              170              175

```

```

Gln Ile Val Gly Asp Ile Glu Asp Glu Phe Asp Glu Asp Glu Ser Ala
          180              185              190

```

```

Asp Asp Ile His Ser Val Ser Ala Glu Arg Trp Arg Ile His Ala Ala
          195              200              205

```


Thr Glu Ile Glu Asp Ile Asn Ala Phe Phe Gly Thr Glu Tyr Gly Ser
 210 215 220

Glu Glu Ala Asp Thr Ile Gly Gly Leu Val Ile Gln Glu Leu Gly His
 225 230 235 240

Leu Pro Val Arg Gly Glu Lys Val Leu Ile Gly Gly Leu Gln Phe Thr
 245 250 255

Val Ala Arg Ala Asp Asn Arg Arg Leu His Thr Leu Met Ala Thr Arg
 260 265 270

Val Lys

<210> 2951

<211> 825

<212> DNA

<213> Neisseria meningitidis

<400> 2951

atggacggcg cacaaccgaa aacgaatttt tttgaacgcc tgattgcccg actcgcccg 60
 gaacccgatt ccgccgaaga cgtattaaac ctgcttcggc aggcgcacga gcaggaagtt 120
 tttgatgcgg atacgctttt aagattggaa aaagtcctcg atttttccga tttggaagt 180
 cgcgacgcga tgattacgcg cagccgtatg aacgttttaa aagaaaacga cagcatcgag 240
 cgcatacccg cctacgttat cgataccgcc cattcgcgct tccccgtcat cggcgaagac 300
 aaagacgaag ttttgggcat tttgcacgcc aaagacctgc tcaaataat gtttaacccc 360
 gagcagttcc acctcaaac cattctccgc ccgcgcgtct tcgtccccga aggcaaatcg 420
 ctgaccgccc ttttaaaaga gttccgcgaa cagcgcaacc atatggcgat tgtcatcgac 480
 gaatacggcg gcacatccgg cttgggtcacc tttgaagaca tcatcgagca aatcgtcggc 540
 gaaatcgaag acgagtttga cgaagacgat agcgcgcgaca atatccatgc cgtttcttcm 600
 gaacgctggc gcatccatgc agtaccgaa atcgaagaca tcaacacctt cttcggcacg 660
 gaatacagca kcgagaagc cgacaccatt ggcggcctgg tcattcaaga gttgggacat 720
 ctgcccgctg gcggcgaaaa agtccttacc ggcggtttgc agttcacctg cgcacgcgcg 780
 gacaaccgcc gcctgcatac gctgatggcg accgcgctga agtaa 825

<210> 2952

<211> 274

<212> PRT

<213> Neisseria meningitidis

<400> 2952

Met Asp Gly Ala Gln Pro Lys Thr Asn Phe Phe Glu Arg Leu Ile Ala
 1 5 10 15

Arg Leu Ala Arg Glu Pro Asp Ser Ala Glu Asp Val Leu Asn Leu Leu
 20 25 30

Arg Gln Ala His Glu Gln Glu Val Phe Asp Ala Asp Thr Leu Leu Arg
 35 40 45

Leu Glu Lys Val Leu Asp Phe Ser Asp Leu Glu Val Arg Asp Ala Met
 50 55 60

Ile Thr Arg Ser Arg Met Asn Val Leu Lys Glu Asn Asp Ser Ile Glu
 65 70 75 80
 Arg Ile Thr Ala Tyr Val Ile Asp Thr Ala His Ser Arg Phe Pro Val
 85 90 95
 Ile Gly Glu Asp Lys Asp Glu Val Leu Gly Ile Leu His Ala Lys Asp
 100 105 110
 Leu Leu Lys Tyr Met Phe Asn Pro Glu Gln Phe His Leu Lys Ser Ile
 115 120 125
 Leu Arg Pro Ala Val Phe Val Pro Glu Gly Lys Ser Leu Thr Ala Leu
 130 135 140
 Leu Lys Glu Phe Arg Glu Gln Arg Asn His Met Ala Ile Val Ile Asp
 145 150 155 160
 Glu Tyr Gly Gly Thr Ser Gly Leu Val Thr Phe Glu Asp Ile Ile Glu
 165 170 175
 Gln Ile Val Gly Glu Ile Glu Asp Glu Phe Asp Glu Asp Asp Ser Ala
 180 185 190
 Asp Asn Ile His Ala Val Ser Ser Glu Arg Trp Arg Ile His Ala Ala
 195 200 205
 Thr Glu Ile Glu Asp Ile Asn Thr Phe Phe Gly Thr Glu Tyr Ser Xaa
 210 215 220
 Glu Glu Ala Asp Thr Ile Gly Gly Leu Val Ile Gln Glu Leu Gly His
 225 230 235 240
 Leu Pro Val Arg Gly Glu Lys Val Leu Ile Gly Gly Leu Gln Phe Thr
 245 250 255
 Val Ala Arg Ala Asp Asn Arg Arg Leu His Thr Leu Met Ala Thr Arg
 260 265 270

Val Lys

<210> 2953

<211> 825

<212> DNA

<213> Neisseria meningitidis

<400> 2953

atggacggcg cacaaccgaa aacaaat tttgaacgcc tgattgcccg actcgcccg 60
 gaaccgatt ccgccgaaga cgtattgacc ctgttgccg aagcgcacga acaggaagta 120
 tttgatgcgg atacgtttt aagattggaa aaagtccctg atttttctga tttggaagtg 180
 cgcgacgcga tgattacgcg cagccgatg aacgttttaa aagaaaacga cagcatcgaa 240
 cgcacacccg cctacgttat cgataccgcc cattcgcgct tccccgcat cggatgaagac 300
 aaagacgaag ttttggttat tttgcacgcc aaagacctgc tcaaatatat gttcaacccc 360
 gagcagttcc acctcaaadc gatattgcgc cctgccgtct tcgtccccga aggcaaatcg 420
 ctgaccgccc ttttaaaaga gttccgcgaa cagcgcaacc atatggcaat cgtcatcgac 480

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gaatacggcg gcacgtcggg tttggtaact tttgaagaca tcacgcagca aatcgtcggc 540
gacatcgaag atgagtttga cgaagacgaa agcgcggaca acatccacgc cgtttccgcc 600
gaacgctggc gcatccacgc ggctaccgaa atcgaagaca tcaacgcctt tttcggcacg 660
gaatacagca gcgaagaagc cgacaccatc ggcggcctgg tcattcagga attgggacac 720
ctgcccggtgc gcggcgaaaa agtccttata ggcgggtttgc agttcacctg cgcccgcgcc 780
gacaaccgcc gcctgcatac gctgatggcg acccgcgtga agtaa 825

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<210> 2954

<211> 274

<212> PRT

<213> *Neisseria meningitidis*

<400> 2954

```

Met Asp Gly Ala Gln Pro Lys Thr Asn Phe Phe Glu Arg Leu Ile Ala
  1             5             10            15

Arg Leu Ala Arg Glu Pro Asp Ser Ala Glu Asp Val Leu Thr Leu Leu
      20             25             30

Arg Gln Ala His Glu Gln Glu Val Phe Asp Ala Asp Thr Leu Leu Arg
      35             40             45

Leu Glu Lys Val Leu Asp Phe Ser Asp Leu Glu Val Arg Asp Ala Met
      50             55             60

Ile Thr Arg Ser Arg Met Asn Val Leu Lys Glu Asn Asp Ser Ile Glu
      65             70             75             80

Arg Ile Thr Ala Tyr Val Ile Asp Thr Ala His Ser Arg Phe Pro Val
      85             90             95

Ile Gly Glu Asp Lys Asp Glu Val Leu Gly Ile Leu His Ala Lys Asp
      100            105            110

Leu Leu Lys Tyr Met Phe Asn Pro Glu Gln Phe His Leu Lys Ser Ile
      115            120            125

Leu Arg Pro Ala Val Phe Val Pro Glu Gly Lys Ser Leu Thr Ala Leu
      130            135            140

Leu Lys Glu Phe Arg Glu Gln Arg Asn His Met Ala Ile Val Ile Asp
      145            150            155            160

Glu Tyr Gly Gly Thr Ser Gly Leu Val Thr Phe Glu Asp Ile Ile Glu
      165            170            175

Gln Ile Val Gly Asp Ile Glu Asp Glu Phe Asp Glu Asp Glu Ser Ala
      180            185            190

Asp Asn Ile His Ala Val Ser Ala Glu Arg Trp Arg Ile His Ala Ala
      195            200            205

Thr Glu Ile Glu Asp Ile Asn Ala Phe Phe Gly Thr Glu Tyr Ser Ser
      210            215            220

Glu Glu Ala Asp Thr Ile Gly Gly Leu Val Ile Gln Glu Leu Gly His

```


Val	Val	Met	Ser	Gly	Val	Thr	Ile	Thr	Asp	Asp	Arg	Lys	Gln	Ser	Met			
			100					105					110					
Asp	Phe	Ser	Asp	Pro	Tyr	Phe	Glu	Ile	Thr	Gln	Val	Val	Leu	Val	Pro			
		115					120					125						
Lys	Gly	Lys	Lys	Val	Ser	Ser	Ser	Glu	Asp	Leu	Lys	Lys	Met	Asn	Lys			
	130					135					140							
Val	Gly	Val	Val	Thr	Gly	His	Thr	Gly	Asp	Phe	Ser	Val	Ser	Lys	Leu			
145					150					155					160			
Leu	Gly	Asn	Asp	Asn	Pro	Lys	Ile	Ala	Arg	Phe	Glu	Asn	Val	Pro	Leu			
			165						170					175				
Ile	Ile	Lys	Glu	Leu	Glu	Asn	Gly	Gly	Leu	Asp	Ser	Val	Val	Ser	Asp			
		180					185						190					
Ser	Ala	Val	Ile	Ala	Asn	Tyr	Val	Lys	Asn	Asn	Pro	Ala	Lys	Gly	Met			
		195					200					205						
Asp	Phe	Val	Thr	Leu	Pro	Asp	Phe	Thr	Thr	Glu	His	Tyr	Gly	Ile	Ala			
	210					215					220							
Val	Arg	Lys	Gly	Asp	Glu	Ala	Thr	Val	Lys	Met	Leu	Asn	Asp	Ala	Leu			
225					230					235					240			
Glu	Lys	Val	Arg	Glu	Ser	Gly	Glu	Tyr	Asp	Lys	Ile	Tyr	Ala	Lys	Tyr			
			245					250					255					
Phe	Ala	Lys	Glu	Gly	Gly	Gln	Ala	Ala	Lys									
		260					265											

<210> 2957

<211> 801

<212> DNA

<213> *Neisseria meningitidis*

<400> 2957

```

atgaaaaaat ggattgccgc cgcccttgcc tgttccgcgc tcgcgctgtc tgcctgcggc 60
ggtcagggca aagataccgc cgcgcctgcc gccaaacccg acaaagtgtc ccgcgtggct 120
tccaacgccg agtttgcccc ctttgaatct ttagactcga aaggcaatgt cgaaggtttc 180
gatgtggatt tgatgaacgc gatggcgaag gcgggcaatt ttaaaatcga attcaaacac 240
cagccgtggg acagcctttt cccgcctta aacaacggcg atgcggacgt tgtgatgtcg 300
ggcgtaacca ttaccgacga ccgcaaacag tctatggact tcagcgaccc gtattttgaa 360
atcacccaag tcgtcctcgt tccgaaaggc aaaaaagtat cttcttcgga agatttgaaa 420
aacatgaaca aagtcggcgt ggtaaccggc tacacgggcg atttctccgt atccaaactc 480
ttgggcaacg acaatccgaa aatcgcgcg tttgaaaaacg ttccctgat tatcaaagaa 540
ctgaaaaacg gcggcttgga ttccgtggtc agcgacagcg cggtcacgc caattatgtg 600
aaaaacaatc cggccaaagg gatggacttc gttaccctgc ccgacttcac caccgaacac 660
tacggcatcg cggtagcga aggcgacgaa gcaaccgtca aaatgctgaa cgatgcgttg 720
gaaaaagtac gcgaaagcgg cgaatacgac aagatttacg ccaaataatt tgcaaaaagaa 780
gacggacagg ccgcaaaata a
gacggacagg ccgcaaaata a 801

```

<210> 2958

<211> 266

<212> PRT

<213> *Neisseria meningitidis*

<400> 2958

Met Lys Lys Trp Ile Ala Ala Ala Leu Ala Cys Ser Ala Leu Ala Leu
1 5 10 15

Ser Ala Cys Gly Gly Gln Gly Lys Asp Thr Ala Ala Pro Ala Ala Asn
20 25 30

Pro Asp Lys Val Tyr Arg Val Ala Ser Asn Ala Glu Phe Ala Pro Phe
35 40 45

Glu Ser Leu Asp Ser Lys Gly Asn Val Glu Gly Phe Asp Val Asp Leu
50 55 60

Met Asn Ala Met Ala Lys Ala Gly Asn Phe Lys Ile Glu Phe Lys His
65 70 75 80

Gln Pro Trp Asp Ser Leu Phe Pro Ala Leu Asn Asn Gly Asp Ala Asp
85 90 95

Val Val Met Ser Gly Val Thr Ile Thr Asp Asp Arg Lys Gln Ser Met
100 105 110

Asp Phe Ser Asp Pro Tyr Phe Glu Ile Thr Gln Val Val Leu Val Pro
115 120 125

Lys Gly Lys Lys Val Ser Ser Ser Glu Asp Leu Lys Asn Met Asn Lys
130 135 140

Val Gly Val Val Thr Gly Tyr Thr Gly Asp Phe Ser Val Ser Lys Leu
145 150 155 160

Leu Gly Asn Asp Asn Pro Lys Ile Ala Arg Phe Glu Asn Val Pro Leu
165 170 175

Ile Ile Lys Glu Leu Glu Asn Gly Gly Leu Asp Ser Val Val Ser Asp
180 185 190

Ser Ala Val Ile Ala Asn Tyr Val Lys Asn Asn Pro Ala Lys Gly Met
195 200 205

Asp Phe Val Thr Leu Pro Asp Phe Thr Thr Glu His Tyr Gly Ile Ala
210 215 220

Val Arg Lys Gly Asp Glu Ala Thr Val Lys Met Leu Asn Asp Ala Leu
225 230 235 240

Glu Lys Val Arg Glu Ser Gly Glu Tyr Asp Lys Ile Tyr Ala Lys Tyr
245 250 255

Phe Ala Lys Glu Asp Gly Gln Ala Ala Lys
260 265

<210> 2959
 <211> 801
 <212> DNA
 <213> Neisseria meningitidis

<400> 2959
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 ggtcagggtg aagatgccgc cgcgccgcgc gcaaatcccg acaaagtgtg ccgcgtggct 120
 tccaacgccg agtttgcccc ctttgaatct ttagactcga aaggcaatgt cgaagggtttc 180
 gatgtggatt tgatgaacgc gatggcgaag gcgggcaatt ttaaaatcga attcaaacac 240
 cagccgtggg acagcctttt ccccgccctt aacaacggcg atgcggacgt tgtgatgtcg 300
 ggcgtaacca ttaccgacga ccgcaaacag tctatggact tcagcgaccc gtattttgaa 360
 atcacccaag tcgtcctcgt tccgaaaggc aaaaaaatat cttcttcga agatttgaaa 420
 aacatgaaca aagtcggcgt ggtaaccggc tacacgggcg atttctcgt atccaaactc 480
 ttgggcaacg acaaccgaa aatcgcgcg tttgaaaacg ttccctgat tatcaaagaa 540
 ctggaaaaacg gcggttggg ttccgtggc agcgacagcg cagtcacgc caattatgtg 600
 aaaaacaatc cgaccaagg gatggacttc gttaccctgc ccgacttcac caccgaacac 660
 tacggcatcg cggtagcaa aggcgacgaa gcaaccgtca aaatgctgaa cgatgcgttg 720
 aaaaagtac gcgaaagcgg cgaatacgac aaaatctacg ccaaataatt tgcaaaagaa 780
 gacggacagg ccgcaaaata a 801

<210> 2960
 <211> 266
 <212> PRT
 <213> Neisseria meningitidis

<400> 2960
 Met Lys Lys Trp Ile Ala Ala Ala Leu Ala Cys Ser Ala Leu Ala Leu
 1 5 10 15
 Ser Ala Cys Gly Gly Gln Gly Lys Asp Ala Ala Ala Pro Ala Ala Asn
 20 25 30
 Pro Asp Lys Val Tyr Arg Val Ala Ser Asn Ala Glu Phe Ala Pro Phe
 35 40 45
 Glu Ser Leu Asp Ser Lys Gly Asn Val Glu Gly Phe Asp Val Asp Leu
 50 55 60
 Met Asn Ala Met Ala Lys Ala Gly Asn Phe Lys Ile Glu Phe Lys His
 65 70 75 80
 Gln Pro Trp Asp Ser Leu Phe Pro Ala Leu Asn Asn Gly Asp Ala Asp
 85 90 95
 Val Val Met Ser Gly Val Thr Ile Thr Asp Asp Arg Lys Gln Ser Met
 100 105 110
 Asp Phe Ser Asp Pro Tyr Phe Glu Ile Thr Gln Val Val Leu Val Pro
 115 120 125
 Lys Gly Lys Lys Ile Ser Ser Ser Glu Asp Leu Lys Asn Met Asn Lys
 130 135 140

Val Gly Val Val Thr Gly Tyr Thr Gly Asp Phe Ser Val Ser Lys Leu
145 150 155 160

Leu Gly Asn Asp Asn Pro Lys Ile Ala Arg Phe Glu Asn Val Pro Leu
165 170 175

Ile Ile Lys Glu Leu Glu Asn Gly Gly Leu Asp Ser Val Val Ser Asp
180 185 190

Ser Ala Val Ile Ala Asn Tyr Val Lys Asn Asn Pro Thr Lys Gly Met
195 200 205

Asp Phe Val Thr Leu Pro Asp Phe Thr Thr Glu His Tyr Gly Ile Ala
210 215 220

Val Arg Lys Gly Asp Glu Ala Thr Val Lys Met Leu Asn Asp Ala Leu
225 230 235 240

Lys Lys Val Arg Glu Ser Gly Glu Tyr Asp Lys Ile Tyr Ala Lys Tyr
245 250 255

Phe Ala Lys Glu Asp Gly Gln Ala Ala Lys
260 265

<210> 2961
<211> 1635
<212> DNA
<213> Neisseria gonorrhoeae

<400> 2961
atcgcatcgc aaaaccttcg attcgacaat cgattcctcc aaaaaatggg caacggcgtg 60
aatattttgc cggccgcgga ttgggtagcc ttgggcgcca aaggccgcaa cgtggtggtt 120
gaccgcgctt tcggcggccc gcacatcacc aaagacggcg taaccgtcgc caaagaaatc 180
gaactgaaag acaagtttga aaatatgggc gcgcaaatgg taaaagaagt cgcgtccaaa 240
accaacgacg tagccggcga cggtagcact accgccaccg tattggcaca atccatcggt 300
gccgaaggca tgaaatacgt taccgcgggc atgaaccgga ccgatctgaa acgcggcacc 360
gacaaagccg ttgccgcttt ggttgaagag ctgaaaaaca tcgccaaacc ttgcgatact 420
tccaaagaaa tcgcccaagt cggctcgatt tccgccaaact ccgacgaaca agtcggcgcg 480
attatcgccg aagcgatgga aaaagtcggc aaagaaggcg tgattaccgt tgaagacggc 540
aaatctttgg aaaacgagct ggacgtggtt gaaggtatgc agttcgaccg cggctacctg 600
tccccttact ttatcaacga cgcggaaaaa caaatcgccg gtctggacaa tccgtttgtt 660
ttgctgttcg acaaaaaaat cagcaacatc cgcgacctgc tgcccgtggt ggaacaagt 720
gcgaaagcca gccgccgcgt gttgattatc gctgaagacg tagaaggcga agccttggcg 780
actttggtcg tgaacaacat ccgcggcatc ctgaaaaccg ttgccgtcaa agccccggc 840
ttcggcgacc gccgcaaagc gatgctgcaa gacatcgcca tcctgaccgg cggcgtagt 900
atttccgaag aagtcggcct gtctttggaa aaagcgactt tggacgactt gggtcaaacc 960
aaacgcacgc aaatcggtga agaaaacact accgtcatcg acggcttcgg cgacgcagcc 1020
caaatcgaag cgcgtgttgc cgaaatccgc caacaaatcg aaaccgcgac cagcgattac 1080
gacaaagaaa aactgcaaga gcgcgttgcc aaactggcag gagcggtggc agtgatcaaa 1140
gtcggcgccg cgaccgaagt cgaaatgaaa gagaaaaaag accgcgtgga agacgcgctg 1200
cacgctaccc gcgcagccgt tgaagaaggc gtggttgacg gcggcgccgt agccctgttg 1260
cgcgcccgtg ccgcttttga aaacctgcac accggcaatg ccgaccaaga cgcaggcgta 1320
caaatcgtat tgcgcgccgt tgagtctccg ctgcgccaaa tcgttgccaa cgcaggcgga 1380
gaaccacgcg tgggtgtgaa caaagtgttg gaaggcaaaag gcaactacgg ttacaacgca 1440
ggctccggcg aatacggcga catgatcgga atgggcgtac tcgaccctgc caaagtaacc 1500
cgttccgcgc tgcaacacgc cgcgtctatc gccggtctga tgctgacgac cgactgcatg 1560

attgccgaaa tccctgaaga aaaaccggct gtgcccgata tggggggaat gggcggtatg 1620
 gccgcatga tgtaa 1635

<210> 2962
 <211> 544
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2962
 Ile Ala Ser Gln Asn Leu Arg Phe Asp Asn Arg Phe Leu Gln Lys Met 15
 1 5 10
 Val Asn Gly Val Asn Ile Leu Pro Ala Ala Asp Trp Val Ala Leu Gly 30
 20 25 30
 Ala Lys Gly Arg Asn Val Val Val Asp Arg Ala Phe Gly Gly Pro His 45
 35 40 45
 Ile Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Lys Asp 60
 50 55 60
 Lys Phe Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys 80
 65 70 75 80
 Thr Asn Asp Val Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala 95
 85 90 95
 Gln Ser Ile Val Ala Glu Gly Met Lys Tyr Val Thr Ala Gly Met Asn 110
 100 105 110
 Pro Thr Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Ala Ala Leu Val 125
 115 120 125
 Glu Glu Leu Lys Asn Ile Ala Lys Pro Cys Asp Thr Ser Lys Glu Ile 140
 130 135 140
 Ala Gln Val Gly Ser Ile Ser Ala Asn Ser Asp Glu Gln Val Gly Ala 160
 145 150 155 160
 Ile Ile Ala Glu Ala Met Glu Lys Val Gly Lys Glu Gly Val Ile Thr 175
 165 170 175
 Val Glu Asp Gly Lys Ser Leu Glu Asn Glu Leu Asp Val Val Glu Gly 190
 180 185 190
 Met Gln Phe Asp Arg Gly Tyr Leu Ser Pro Tyr Phe Ile Asn Asp Ala 205
 195 200 205
 Glu Lys Gln Ile Ala Gly Leu Asp Asn Pro Phe Val Leu Leu Phe Asp 220
 210 215 220
 Lys Lys Ile Ser Asn Ile Arg Asp Leu Leu Pro Val Leu Glu Gln Val 240
 225 230 235 240
 Ala Lys Ala Ser Arg Pro Leu Leu Ile Ile Ala Glu Asp Val Glu Gly 255
 245 250 255

Glu Ala Leu Ala Thr Leu Val Val Asn Asn Ile Arg Gly Ile Leu Lys
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 Thr Val Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
 275 280 285
 Leu Gln Asp Ile Ala Ile Leu Thr Gly Gly Val Val Ile Ser Glu Glu
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 Val Gly Leu Ser Leu Glu Lys Ala Thr Leu Asp Asp Leu Gly Gln Thr
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 Lys Arg Ile Glu Ile Gly Glu Glu Asn Thr Thr Val Ile Asp Gly Phe
 325 330 335
 Gly Asp Ala Ala Gln Ile Glu Ala Arg Val Ala Glu Ile Arg Gln Gln
 340 345 350
 Ile Glu Thr Ala Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg
 355 360 365
 Val Ala Lys Leu Ala Gly Gly Val Ala Val Ile Lys Val Gly Ala Ala
 370 375 380
 Thr Glu Val Glu Met Lys Glu Lys Lys Asp Arg Val Glu Asp Ala Leu
 385 390 395 400
 His Ala Thr Arg Ala Ala Val Glu Glu Gly Val Val Ala Gly Gly Gly
 405 410 415
 Val Ala Leu Leu Arg Ala Arg Ala Ala Leu Glu Asn Leu His Thr Gly
 420 425 430
 Asn Ala Asp Gln Asp Ala Gly Val Gln Ile Val Leu Arg Ala Val Glu
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 Ser Pro Leu Arg Gln Ile Val Ala Asn Ala Gly Gly Glu Pro Ser Val
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 Val Val Asn Lys Val Leu Glu Gly Lys Gly Asn Tyr Gly Tyr Asn Ala
 465 470 475 480
 Gly Ser Gly Glu Tyr Gly Asp Met Ile Gly Met Gly Val Leu Asp Pro
 485 490 495
 Ala Lys Val Thr Arg Ser Ala Leu Gln His Ala Ala Ser Ile Ala Gly
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 <211> 1635
 <212> DNA
 <213> Neisseria meningitidis

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 <213> Neisseria meningitidis

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 35 40 45
 Gly Thr Ala Ala Ala Cys Gly Gly Cys Gly Thr Gly Ala Ala Cys Ala
 50 55 60

Thr Thr Cys Thr Gly Gly Cys Ala Ala Ala Cys Gly Cys Cys Gly Thr
 65 70 75 80
 Cys Cys Gly Cys Gly Thr Ala Ala Cys Cys Thr Thr Gly Gly Gly Cys
 85 90 95
 Cys Cys Cys Ala Ala Ala Gly Gly Thr Cys Gly Cys Ala Ala Cys Gly
 100 105 110
 Thr Ala Gly Thr Cys Gly Thr Thr Gly Ala Cys Cys Gly Cys Gly Cys
 115 120 125
 Ala Thr Thr Cys Gly Gly Cys Gly Gly Cys Cys Cys Gly Cys Ala Cys
 130 135 140
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 145 150 155 160
 Thr Ala Ala Cys Cys Gly Thr Cys Gly Cys Cys Ala Ala Ala Gly Ala
 165 170 175
 Ala Ala Thr Cys Gly Ala Ala Cys Thr Gly Ala Ala Ala Gly Ala Cys
 180 185 190
 Ala Ala Gly Thr Thr Thr Gly Ala Ala Ala Ala Thr Ala Thr Gly Gly
 195 200 205
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 210 215 220
 Ala Gly Ala Ala Gly Thr Thr Gly Cys Gly Thr Cys Cys Ala Ala Ala
 225 230 235 240
 Ala Cys Cys Ala Ala Cys Gly Ala Cys Gly Thr Gly Gly Cys Ala Gly
 245 250 255
 Gly Cys Gly Ala Cys Gly Gly Thr Ala Cys Gly Ala Cys Thr Ala Cys
 260 265 270
 Cys Gly Cys Cys Ala Cys Cys Gly Thr Ala Cys Thr Gly Gly Cys Gly
 275 280 285
 Cys Ala Ala Thr Cys Cys Ala Thr Cys Gly Thr Thr Gly Cys Cys Gly
 290 295 300
 Ala Ala Gly Gly Thr Ala Thr Gly Ala Ala Ala Thr Ala Thr Gly Thr
 305 310 315 320
 Thr Ala Cys Cys Gly Cys Ala Gly Gly Thr Ala Thr Gly Ala Ala Thr
 325 330 335
 Cys Cys Gly Ala Cys Cys Gly Ala Cys Cys Thr Gly Ala Ala Ala Cys
 340 345 350
 Gly Cys Gly Gly Thr Ala Thr Cys Gly Ala Thr Ala Ala Ala Gly Cys
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Cys Gly Thr Cys Gly Cys Cys Gly Cys Thr Thr Thr Gly Gly Thr Thr
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 385 390 395 400
 Thr Cys Gly Cys Cys Ala Ala Ala Cys Cys Thr Thr Gly Cys Gly Ala
 405 410 415
 Cys Ala Cys Thr Thr Cys Thr Ala Ala Gly Ala Ala Ala Thr Cys
 420 425 430
 Gly Cys Cys Cys Ala Ala Gly Thr Cys Gly Gly Cys Thr Cys Thr Ala
 435 440 445
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 465 470 475 480
 Ala Thr Thr Ala Thr Cys Gly Cys Cys Gly Ala Ala Gly Cys Gly Ala
 485 490 495
 Thr Gly Gly Ala Ala Ala Ala Ala Gly Thr Cys Gly Gly Cys Ala Ala
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 515 520 525
 Gly Thr Thr Gly Ala Ala Gly Ala Cys Gly Gly Cys Ala Ala Gly Thr
 530 535 540
 Cys Thr Thr Thr Gly Gly Ala Ala Ala Ala Cys Gly Ala Gly Cys Thr
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 Gly Gly Ala Cys Gly Thr Ala Gly Thr Thr Gly Ala Ala Gly Gly Thr
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 Ala Thr Gly Cys Ala Gly Thr Thr Cys Gly Ala Cys Cys Gly Cys Gly
 580 585 590
 Gly Cys Thr Ala Cys Cys Thr Gly Thr Cys Thr Cys Cys Thr Thr Ala
 595 600 605
 Cys Thr Thr Cys Ala Thr Cys Ala Ala Cys Gly Ala Thr Gly Cys Gly
 610 615 620
 Gly Ala Ala Ala Ala Ala Cys Ala Ala Ala Thr Cys Gly Cys Thr Gly
 625 630 635 640
 Cys Thr Thr Thr Gly Gly Ala Cys Ala Ala Thr Cys Cys Gly Thr Thr
 645 650 655
 Thr Gly Thr Ala Thr Thr Gly Thr Thr Gly Thr Thr Cys Gly Ala Cys
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Ala Ala Ala Ala Ala Ala Ala Thr Cys Ala Gly Cys Ala Ala Cys Ala
 675 680 685

Thr Cys Cys Gly Cys Gly Ala Cys Cys Thr Gly Cys Thr Gly Cys Cys
 690 695 700

Thr Gly Thr Thr Thr Thr Gly Gly Ala Ala Cys Ala Ala Gly Thr Gly
 705 710 715 720

Gly Cys Ala Ala Ala Ala Gly Cys Cys Ala Gly Cys Cys Gly Thr Cys
 725 730 735

Cys Gly Cys Thr Gly Thr Thr Gly Ala Thr Thr Ala Thr Cys Gly Cys
 740 745 750

Thr Gly Ala Ala Gly Ala Cys Gly Thr Ala Gly Ala Ala Gly Gly Cys
 755 760 765

Gly Ala Ala Gly Cys Cys Thr Thr Gly Gly Cys Gly Ala Cys Thr Thr
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Cys Cys Gly Ala Gly Gly Cys Ala Thr Cys Cys Thr Gly Ala Ala Ala
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Ala Cys Cys Gly Thr Thr Gly Cys Cys Gly Thr Cys Ala Ala Ala Gly
 820 825 830

Cys Cys Cys Cys Thr Gly Gly Cys Thr Thr Cys Gly Gly Cys Gly Ala
 835 840 845

Cys Cys Gly Cys Cys Gly Cys Ala Ala Ala Gly Cys Gly Ala Thr Gly
 850 855 860

Thr Thr Gly Cys Ala Ala Gly Ala Cys Ala Thr Cys Gly Cys Cys Ala
 865 870 875 880

Thr Cys Cys Thr Gly Ala Cys Cys Gly Gly Cys Gly Gly Cys Gly Thr
 885 890 895

Gly Gly Thr Gly Ala Thr Thr Thr Cys Cys Gly Ala Ala Gly Ala Ala
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Gly Thr Cys Gly Gly Thr Cys Thr Gly Thr Cys Thr Thr Thr Gly Gly
 915 920 925

Ala Ala Ala Ala Ala Gly Cys Gly Ala Cys Thr Thr Thr Gly Gly Ala
 930 935 940

Cys Gly Ala Cys Thr Thr Gly Gly Gly Thr Cys Ala Ala Gly Cys Cys
 945 950 955 960

Ala Ala Ala Cys Gly Cys Ala Thr Cys Gly Ala Ala Ala Thr Cys Gly
 965 970 975

Gly Thr Ala Ala Ala Gly Ala Ala Ala Ala Cys Ala Cys Cys Ala Cys
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Cys Ala Thr Cys Ala Thr Cys Gly Ala Cys Gly Gly Cys Thr Thr Thr
 995 1000 1005

Gly Gly Cys Gly Ala Cys Gly Cys Ala Gly Cys Cys Cys Ala Ala Ala
 1010 1015 1020

Thr Cys Gly Ala Ala Gly Cys Gly Cys Gly Thr Gly Thr Thr Gly Cys
 1025 1030 1035 1040

Cys Gly Ala Ala Ala Thr Cys Cys Gly Cys Cys Ala Ala Cys Ala Ala
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Gly Thr Gly Gly Cys Thr Ala Ala Ala Thr Thr Gly Gly Cys Ala Gly
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Gly Cys Gly Gly Cys Gly Thr Gly Gly Cys Ala Gly Thr Cys Ala Thr
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Cys Ala Ala Ala Gly Thr Cys Gly Gly Thr Gly Cys Cys Gly Cys Gly
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Ala Cys Cys Gly Ala Ala Gly Thr Cys Gly Ala Ala Ala Thr Gly Ala
 1155 1160 1165

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Cys Gly Thr Gly Gly Ala Ala Gly Ala Cys Gly Cys Gly Cys Thr Gly
 1185 1190 1195 1200

Cys Ala Cys Gly Cys Thr Ala Cys Cys Cys Gly Cys Gly Cys Ala Gly
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Cys Cys Gly Thr Thr Gly Ala Ala Gly Ala Ala Gly Gly Cys Gly Thr
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 1250 1255 1260

Cys Cys Cys Gly Thr Gly Cys Thr Gly Cys Thr Thr Thr Gly Gly Ala
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 1285 1290 1295

Ala Ala Thr Gly Cys Cys Gly Ala Cys Cys Ala Ala Gly Ala Cys Gly
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Cys Ala Gly Gly Cys Gly Thr Ala Cys Ala Ala Ala Thr Cys Gly Thr
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Cys Thr Thr Gly Cys Gly Cys Gly Cys Cys Gly Thr Thr Gly Ala Gly
 1330 1335 1340

Thr Cys Thr Cys Cys Gly Cys Thr Gly Cys Gly Cys Cys Ala Ala Ala
 1345 1350 1355 1360

Thr Cys Gly Thr Thr Gly Cys Cys Ala Ala Cys Gly Cys Ala Gly Gly
 1365 1370 1375

Cys Gly Gly Cys Gly Ala Ala Cys Cys Cys Ala Gly Cys Gly Thr Gly
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Gly Thr Thr Gly Thr Gly Ala Ala Cys Ala Ala Ala Gly Thr Ala Thr
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Cys Thr Ala Cys Gly Gly Thr Thr Ala Cys Ala Ala Cys Gly Cys Thr
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Gly Gly Cys Ala Gly Cys Gly Gly Cys Gly Ala Ala Thr Ala Cys Gly
 1445 1450 1455

Gly Cys Gly Ala Thr Ala Thr Gly Ala Thr Cys Gly Ala Ala Ala Thr
 1460 1465 1470

Gly Gly Gly Cys Gly Thr Ala Cys Thr Cys Gly Ala Cys Cys Cys Cys
 1475 1480 1485

Gly Cys Cys Ala Ala Ala Gly Thr Ala Ala Cys Cys Cys Gly Thr Thr
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Cys Thr Gly Cys Gly Cys Thr Gly Cys Ala Ala Cys Ala Cys Gly Cys
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Cys Gly Cys Ala Thr Cys Thr Ala Thr Cys Gly Cys Cys Gly Gly Cys
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Thr Thr Gly Ala Thr Gly Cys Thr Gly Ala Cys Cys Ala Cys Thr Gly
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Ala Thr Thr Gly Cys Ala Thr Gly Ala Thr Cys Gly Cys Thr Gly Ala
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Ala Ala Thr Cys Cys Cys Cys Gly Ala Ala Gly Ala Cys Ala Ala Ala
 1570 1575 1580

Cys Cys Gly Gly Cys Thr Gly Thr Gly Cys Cys Thr Gly Ala Thr Ala
 1585 1590 1595 1600

Thr Gly Gly Gly Cys Gly Gly Cys Ala Thr Gly Gly Gly Thr Gly Gly
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Thr Ala Ala
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 <213> Neisseria meningitidis

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 aaatcctttg aaaacgagct ggacgtggtt gaaggtatgc aattcgaccg cggctacctg 600
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 <211> 544
 <212> PRT
 <213> Neisseria meningitidis

<400> 2966
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35 40 45
Ile Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Lys Asp
50 55 60
Lys Phe Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
65 70 75 80
Thr Asn Asp Val Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
85 90 95
Gln Ser Ile Val Ala Glu Gly Met Lys Tyr Val Thr Ala Gly Met Asn
100 105 110
Pro Thr Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Ala Ala Leu Val
115 120 125
Glu Glu Leu Lys Asn Ile Ala Lys Pro Cys Asp Thr Ser Lys Glu Ile
130 135 140
Ala Gln Val Gly Ser Ile Ser Ala Asn Ser Asp Glu Gln Val Gly Ala
145 150 155 160
Ile Ile Ala Glu Ala Met Glu Lys Val Gly Lys Glu Gly Val Ile Thr
165 170 175
Val Glu Asp Gly Lys Ser Leu Glu Asn Glu Leu Asp Val Val Glu Gly
180 185 190
Met Gln Phe Asp Arg Gly Tyr Leu Ser Pro Tyr Phe Ile Asn Asp Ala
195 200 205
Glu Lys Gln Ile Ala Gly Leu Asp Asn Pro Phe Val Leu Leu Phe Asp
210 215 220
Lys Lys Ile Ser Asn Ile Arg Asp Leu Leu Pro Val Leu Glu Gln Val
225 230 235 240
Ala Lys Ala Ser Arg Pro Leu Leu Ile Ile Ala Glu Asp Val Glu Gly
245 250 255
Glu Ala Leu Ala Thr Leu Val Val Asn Asn Ile Arg Gly Ile Leu Lys
260 265 270
Thr Val Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
275 280 285
Leu Gln Asp Ile Ala Ile Leu Thr Gly Gly Thr Val Ile Ser Glu Glu
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Val Gly Leu Ser Leu Glu Lys Ala Thr Leu Asp Asp Leu Gly Gln Ala

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Ile Glu Thr Ala Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg						
	355			360		365
Val Ala Lys Leu Ala Gly Gly Val Ala Val Ile Lys Val Gly Ala Ala						
	370			375		380
Thr Glu Val Glu Met Lys Glu Lys Lys Asp Arg Val Glu Asp Ala Leu						
	385			390		400
His Ala Thr Arg Ala Ala Val Glu Glu Gly Val Val Ala Gly Gly Gly						
	405			410		415
Val Ala Leu Leu Arg Ala Arg Ala Ala Leu Glu Asn Leu His Thr Gly						
	420			425		430
Asn Ala Asp Gln Asp Ala Gly Val Gln Ile Val Leu Arg Ala Val Glu						
	435			440		445
Ser Pro Leu Arg Gln Ile Val Ala Asn Ala Gly Gly Glu Pro Ser Val						
	450			455		460
Val Val Asn Lys Val Leu Glu Gly Lys Gly Asn Tyr Gly Tyr Asn Ala						
	465			470		475
Gly Ser Gly Glu Tyr Gly Asp Met Ile Glu Met Gly Val Leu Asp Pro						
	485			490		495
Ala Lys Val Thr Arg Ser Ala Leu Gln His Ala Ala Ser Ile Ala Gly						
	500			505		510
Leu Met Leu Thr Thr Asp Cys Met Ile Ala Glu Ile Pro Glu Asp Lys						
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Pro Ala Met Pro Asp Met Gly Gly Met Gly Gly Met Gly Gly Met Met						
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<210> 2967

<211> 1500

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2967

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atcgaacaca ccaaagacga cggcagtgtc agtatgctgc tgcccgactt tgcccaactg 180

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<211> 499

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2968

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Ser Val Ser Met Leu Leu Pro Asp Phe Ala Gln Leu Val Gln Ser Glu
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Gly Pro Ala Val Val Asn Ile Gln Ala Ala Pro Ala Pro Arg Thr Gln
65 70 75 80

Asn Gly Ser Gly Asn Ala Glu Thr Asp Ser Asp Pro Leu Ala Asp Ser
85 90 95

Asp Pro Phe Tyr Glu Phe Phe Lys Arg Leu Val Pro Asn Met Pro Glu
100 105 110

Ile Pro Gln Glu Glu Ala Asp Asp Gly Gly Leu Asn Phe Gly Ser Gly
115 120 125

Phe Ile Ile Ser Lys Asn Gly Tyr Ile Leu Thr Asn Thr His Val Val
130 135 140

Ala Gly Met Gly Ser Ile Lys Val Leu Leu Asn Asp Lys Arg Glu Tyr
 145 150 155 160
 Thr Ala Lys Leu Ile Gly Ser Asp Val Gln Ser Asp Val Ala Leu Leu
 165 170 175
 Lys Ile Asp Ala Thr Glu Glu Leu Pro Val Val Lys Ile Gly Asn Pro
 180 185 190
 Lys Asn Leu Lys Pro Gly Glu Trp Val Ala Ala Ile Gly Ala Pro Phe
 195 200 205
 Gly Phe Asp Asn Ser Val Thr Ala Gly Ile Val Ser Ala Lys Gly Arg
 210 215 220
 Ser Leu Pro Asn Glu Ser Tyr Thr Pro Phe Ile Gln Thr Asp Val Ala
 225 230 235 240
 Ile Asn Pro Gly Asn Ser Gly Gly Pro Leu Phe Asn Leu Lys Gly Gln
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 Val Val Gly Ile Asn Ser Gln Ile Tyr Ser Arg Ser Gly Gly Phe Met
 260 265 270
 Gly Ile Ser Phe Ala Ile Pro Ile Asp Val Ala Met Asn Val Ala Glu
 275 280 285
 Gln Leu Lys Asn Thr Gly Lys Val Gln Arg Gly Gln Leu Gly Val Ile
 290 295 300
 Ile Gln Glu Val Ser Tyr Gly Leu Ala Gln Ser Phe Gly Leu Asp Lys
 305 310 315 320
 Ala Ser Gly Ala Leu Ile Ala Lys Ile Leu Pro Gly Ser Pro Ala Glu
 325 330 335
 Arg Ala Gly Leu Gln Ala Gly Asp Ile Val Leu Ser Leu Asp Gly Gly
 340 345 350
 Glu Ile Arg Ser Ser Gly Asp Leu Pro Val Met Val Gly Ala Ile Thr
 355 360 365
 Pro Gly Lys Glu Val Ser Leu Gly Val Trp Arg Lys Gly Glu Glu Ile
 370 375 380
 Thr Ile Lys Ala Lys Leu Gly Asn Ala Ala Glu His Thr Gly Ala Ser
 385 390 395 400
 Ser Lys Thr Asp Glu Ala Pro Tyr Thr Glu Gln Gln Ser Gly Thr Phe
 405 410 415
 Ser Val Glu Ser Ala Gly Ile Thr Leu Gln Thr His Thr Asp Ser Ser
 420 425 430
 Gly Lys His Leu Val Val Val Arg Val Ser Asp Ala Ala Glu Arg Ala

435

440

445

Gly Leu Arg Arg Gly Asp Glu Ile Leu Ala Val Gly Gln Val Pro Val
 450 455 460

Asn Asp Glu Ala Gly Phe Arg Lys Ala Met Asp Lys Ala Gly Lys Asn
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 485 490 495

Asn Leu Gln

<210> 2969

<211> 1500

<212> DNA

<213> Neisseria meningitidis

<400> 2969

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atcgaacaca ccaaagacga cggcagcgtc agtatgctgc tgcccgactt tgcccaactg 180
gttcaaagtg aaggtccggc agtcgtcaat attcaggcag cccccgcccc gcgcacccaa 240
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acccacgtcg ttaccggcat gggcagtatc aaagtccctg tcaacgacaa gcgcgaatat 480
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gtcgcgcgca tcggcgcgcc cttcggcttc gacaacagcg tgaccgcggg catcgtgtcc 660
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caagtccccg tcaatgacga agccggtttc cgcaaagcta tggacaaggc aggcacaaac 1440
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<210> 2970

<211> 499

<212> PRT

<213> Neisseria meningitidis

<400> 2970

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Ser Leu Ala Gly Cys Asp Lys Ala Gly Ser Phe Phe Val Ala Asp Lys
 20 25 30
 Lys Glu Ala Ser Phe Val Glu Arg Ile Glu His Thr Lys Asp Asp Gly
 35 40 45
 Ser Val Ser Met Leu Leu Pro Asp Phe Ala Gln Leu Val Gln Ser Glu
 50 55 60
 Gly Pro Ala Val Val Asn Ile Gln Ala Ala Pro Ala Pro Arg Thr Gln
 65 70 75 80
 Asn Gly Ser Gly Asn Ala Glu Asn Asp Ser Asp Pro Ile Ala Asp Asn
 85 90 95
 Asp Pro Phe Tyr Glu Phe Phe Lys Arg Leu Val Pro Asn Met Pro Glu
 100 105 110
 Ile Pro Gln Glu Glu Ala Asp Asp Gly Gly Leu Asn Phe Gly Ser Gly
 115 120 125
 Phe Ile Ile Ser Lys Asp Gly Tyr Ile Leu Thr Asn Thr His Val Val
 130 135 140
 Thr Gly Met Gly Ser Ile Lys Val Leu Leu Asn Asp Lys Arg Glu Tyr
 145 150 155 160
 Thr Ala Lys Leu Ile Gly Ser Asp Val Gln Ser Asp Val Ala Leu Leu
 165 170 175
 Lys Ile Asp Ala Thr Glu Glu Leu Pro Val Val Lys Ile Gly Asn Pro
 180 185 190
 Lys Asp Leu Lys Pro Gly Glu Trp Val Ala Ala Ile Gly Ala Pro Phe
 195 200 205
 Gly Phe Asp Asn Ser Val Thr Ala Gly Ile Val Ser Ala Lys Gly Arg
 210 215 220
 Ser Leu Pro Asn Glu Ser Tyr Thr Pro Phe Ile Gln Thr Asp Val Ala
 225 230 235 240
 Ile Asn Pro Gly Asn Ser Gly Gly Pro Leu Phe Asn Leu Lys Gly Gln
 245 250 255
 Val Val Gly Ile Asn Ser Gln Ile Tyr Ser Arg Ser Gly Gly Phe Met
 260 265 270
 Gly Ile Ser Phe Ala Ile Pro Ile Asp Val Ala Met Asn Val Ala Glu
 275 280 285
 Gln Leu Lys Asn Thr Gly Lys Val Gln Arg Gly Gln Leu Gly Val Ile
 290 295 300
 Ile Gln Glu Val Ser Tyr Gly Leu Ala Gln Ser Phe Gly Leu Asp Lys
 305 310 315 320

Ala Gly Gly Ala Leu Ile Ala Lys Ile Leu Pro Gly Ser Pro Ala Glu
325 330 335

Arg Ala Gly Leu Gln Ala Gly Asp Ile Val Leu Ser Leu Asp Gly Gly
340 345 350

Glu Ile Arg Ser Ser Gly Asp Leu Pro Val Met Val Gly Ala Ile Thr
355 360 365

Pro Gly Lys Glu Val Ser Leu Gly Val Trp Arg Lys Gly Glu Glu Ile
370 375 380

Thr Ile Lys Val Lys Leu Gly Asn Ala Ala Glu His Ile Gly Ala Ser
385 390 395 400

Ser Lys Thr Asp Glu Ala Pro Tyr Thr Glu Gln Gln Ser Gly Thr Phe
405 410 415

Ser Val Glu Ser Ala Gly Ile Thr Leu Gln Thr His Thr Asp Ser Ser
420 425 430

Gly Gly His Leu Val Val Val Arg Val Ser Asp Ala Ala Glu Arg Ala
435 440 445

Gly Leu Arg Arg Gly Asp Glu Ile Leu Ala Val Gly Gln Val Pro Val
450 455 460

Asn Asp Glu Ala Gly Phe Arg Lys Ala Met Asp Lys Ala Gly Lys Asn
465 470 475 480

Val Pro Leu Leu Ile Met Arg Arg Gly Asn Thr Leu Phe Ile Ala Leu
485 490 495

Asn Leu Gln

<210> 2971
<211> 1500
<212> DNA
<213> Neisseria meningitidis

<400> 2971
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atcaaacaca ccaaagacga cggcagcgtc agtatgctgc tgcccgaactt tgtccaactg 180
gttcaaagcg aaggccccgc agtcgtcaat attcaggcag cccccgcccc gcgcacccaa 240
aacggcagca gcaatgccga aaccgattcc gaccgccttg ccgacagcga cccgttctac 300
gaatttttca aacgcctcgt cccgaacatg cccgaaatcc cccaagaaga agcagatgac 360
ggnggattga acttcggttc gggcttcac atcagcaaag acggctatat tctgaccaat 420
acgcacgtcg ttaccggcat gggcagtatc aaagtcctgc tcaacgacaa gcgcgaatat 480
accgccaaac tcatcggttc ggatgtccaa tccgatgtcg cccttctgaa aatcgacgca 540
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gtcgcgcgcca tcggcgcgcc ctctcggttc gacaacagcg tgaccgcccg cntcgtgtcc 660
gccaaaggca gaagcctgcc caacgaaagc tacacaccct tcatccaaac cgacgttgcc 720
atcaatccgg gcaactccgg cggcccgcgtg ttcaacttaa aaggacaggt cgtcggcatc 780

aactcgcaaa tatacagccg cagcggcgga ttcattggga tttccttcgc catcccgatt 840
gacgttgcca tgaatgtcgc cgaacagctg aaaaacaccg gcaaagtcca acgcggacaa 900
ctgggctgga ttattcaaga agtatcctac ggtttggcac aatcgttcgg tttggacaaa 960
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cgggcgggcg acatcgctct cagcctcgac ggcgagaaaa tacgttcttc cggcgacctt 1080
cccgttatgg tcggcgccat tacgcgggga aaagaagtca gcctcggcgt atggcgcaaa 1140
ggcgaagaaa tcacaatcaa agtcaagctg ggcaacgccg ccgagcatat cggcgcatca 1200
tccaaaacag atgaagcccc ctacaccgaa cagcaatccg gtacgttctc ggtcgaatcc 1260
gcaggcatta cccttcagac acataccgac agcagcgggc gacacctcgt cgtcgtacgg 1320
gtttccgacg cggcagaacg cgcaggcttg aggcgcggcg acgaaattct tgccgctcggg 1380
caagtccccg tcaatgacga agccggtttc cgcaaagcta tggacaaggc aggcaaaaaac 1440
gtccccctgc tgatcatgcg ccgtggcaac acgctgttta tcgcattaaa cctgcaataa 1500

<210> 2972

<211> 499

<212> PRT

<213> *Neisseria meningitidis*

<400> 2972

Val	Phe	Lys	Lys	Tyr	Gln	Tyr	Leu	Ala	Leu	Ala	Ala	Leu	Cys	Ala	Ala	1	5	10	15
Ser	Leu	Ala	Gly	Cys	Asp	Lys	Ala	Gly	Ser	Phe	Phe	Gly	Ala	Asp	Lys	20	25	30	
Lys	Glu	Ala	Ser	Phe	Val	Glu	Arg	Ile	Lys	His	Thr	Lys	Asp	Asp	Gly	35	40	45	
Ser	Val	Ser	Met	Leu	Leu	Pro	Asp	Phe	Val	Gln	Leu	Val	Gln	Ser	Glu	50	55	60	
Gly	Pro	Ala	Val	Val	Asn	Ile	Gln	Ala	Ala	Pro	Ala	Pro	Arg	Thr	Gln	65	70	75	80
Asn	Gly	Ser	Ser	Asn	Ala	Glu	Thr	Asp	Ser	Asp	Pro	Leu	Ala	Asp	Ser	85	90	95	
Asp	Pro	Phe	Tyr	Glu	Phe	Phe	Lys	Arg	Leu	Val	Pro	Asn	Met	Pro	Glu	100	105	110	
Ile	Pro	Gln	Glu	Glu	Ala	Asp	Asp	Gly	Gly	Leu	Asn	Phe	Gly	Ser	Gly	115	120	125	
Phe	Ile	Ile	Ser	Lys	Asp	Gly	Tyr	Ile	Leu	Thr	Asn	Thr	His	Val	Val	130	135	140	
Thr	Gly	Met	Gly	Ser	Ile	Lys	Val	Leu	Leu	Asn	Asp	Lys	Arg	Glu	Tyr	145	150	155	160
Thr	Ala	Lys	Leu	Ile	Gly	Ser	Asp	Val	Gln	Ser	Asp	Val	Ala	Leu	Leu	165	170	175	
Lys	Ile	Asp	Ala	Thr	Glu	Glu	Leu	Pro	Val	Val	Lys	Ile	Gly	Asn	Pro	180	185	190	
Lys	Asp	Leu	Lys	Pro	Gly	Glu	Trp	Val	Ala	Ala	Ile	Gly	Ala	Pro	Phe				

195	200	205
Gly Phe Asp Asn Ser Val Thr Ala Gly Xaa Val Ser Ala Lys Gly Arg		
210	215	220
Ser Leu Pro Asn Glu Ser Tyr Thr Pro Phe Ile Gln Thr Asp Val Ala		
225	230	235 240
Ile Asn Pro Gly Asn Ser Gly Gly Pro Leu Phe Asn Leu Lys Gly Gln		
	245	250 255
Val Val Gly Ile Asn Ser Gln Ile Tyr Ser Arg Ser Gly Gly Phe Met		
	260	265 270
Gly Ile Ser Phe Ala Ile Pro Ile Asp Val Ala Met Asn Val Ala Glu		
	275	280 285
Gln Leu Lys Asn Thr Gly Lys Val Gln Arg Gly Gln Leu Gly Val Ile		
	290	295 300
Ile Gln Glu Val Ser Tyr Gly Leu Ala Gln Ser Phe Gly Leu Asp Lys		
305	310	315 320
Ala Gly Gly Ala Leu Ile Ala Lys Ile Leu Pro Gly Ser Pro Ala Glu		
	325	330 335
Arg Ala Gly Leu Arg Ala Gly Asp Ile Val Leu Ser Leu Asp Gly Gly		
	340	345 350
Glu Ile Arg Ser Ser Gly Asp Leu Pro Val Met Val Gly Ala Ile Thr		
	355	360 365
Pro Gly Lys Glu Val Ser Leu Gly Val Trp Arg Lys Gly Glu Glu Ile		
	370	375 380
Thr Ile Lys Val Lys Leu Gly Asn Ala Ala Glu His Ile Gly Ala Ser		
385	390	395 400
Ser Lys Thr Asp Glu Ala Pro Tyr Thr Glu Gln Gln Ser Gly Thr Phe		
	405	410 415
Ser Val Glu Ser Ala Gly Ile Thr Leu Gln Thr His Thr Asp Ser Ser		
	420	425 430
Gly Gly His Leu Val Val Val Arg Val Ser Asp Ala Ala Glu Arg Ala		
	435	440 445
Gly Leu Arg Arg Gly Asp Glu Ile Leu Ala Val Gly Gln Val Pro Val		
	450	455 460
Asn Asp Glu Ala Gly Phe Arg Lys Ala Met Asp Lys Ala Gly Lys Asn		
465	470	475 480
Val Pro Leu Leu Ile Met Arg Arg Gly Asn Thr Leu Phe Ile Ala Leu		
	485	490 495
Asn Leu Gln		

<210> 2973
 <211> 1527
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 2973
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 ctggacaaca tcctgcaaata ccggcacacc cctcataaca acgggctatc cgacatctac 180
 ctgctcgacg acccccacga agcctttgcc gcccgcgccg cccttatcga atctgccgaa 240
 cacagcctcg atttgcaata ctacatttgg cgcaacgaca ttcccggcag gctgctgttc 300
 aacctcatgt accttgccgc agaacgcggc gtgcggtac gcctgctgtt ggacgacaac 360
 aacacgcgcg gcttggacga tctcctgctc gccctcgaca gccatcccaa tatctaagt 420
 cgctgttca accccttcgt cctacgcaaa tggcgcgac tcggctacct gaccgacttc 480
 ccccgctca accgcgcgat gcacaacaaa tctttaccg ccgacaaccg cgccaccata 540
 ctggcgcgac gcaatatcgg cgacgaatac ttcaaagtcg gtgaggacac cgttttcgcc 600
 gacctggaca tcctcgccac cggcagcgtc gtcgcggaag tatcgcacga cttcgaccgc 660
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 cagagcgctc aaaccgcct gatcagcgac agcctgcaa aaggactcga ccgcgaccgc 900
 cgcaaacgcg cgattgcggg gaggctgcaa gacgcgctca aacagcccga aaaaagcgtc 960
 tatctggttt caccctatct cgccctaca aaatccggca cagacgcact ggcaaaactg 1020
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 tccgtaacca gcctgcatgc caaaaccttc attgtggacg gcaaacgcat cttcatcggc 1260
 tcattcaacc tcgacccccg ttccgcacgg ctcaataccg aaatgggctg cgtcatcgaa 1320
 agccccaaaa tcgcagaaca gatggagcgc accctcgccg ataccacacc cgaatacgcc 1380
 taccgcgtta ccctcgacaa acacaaccgc ctgcaatggc acgatccgc caccgaaaa 1440
 acctaccgga acgaaccgga agccaaactt tggaaacgca tcgcgcgcaa aatcctatcc 1500
 ctgctgcccc tcgaagggtt attatag 1527

<210> 2974
 <211> 507
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 2974
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 Cys Ser Ser Trp Leu Pro Pro Leu Glu Glu Arg Thr Glu Ser Arg His
 20 25 30
 Phe Asn Thr Ser Lys Pro Val Leu Leu Asp Asn Ile Leu Gln Ile Arg
 35 40 45
 His Thr Pro His Asn Asn Gly Leu Ser Asp Ile Tyr Leu Leu Asp Asp
 50 55 60
 Pro His Glu Ala Phe Ala Ala Arg Ala Ala Leu Ile Glu Ser Ala Glu
 65 70 75 80

His Ser Leu Asp Leu Gln Tyr Tyr Ile Trp Arg Asn Asp Ile Ser Gly
 85 90 95

Arg Leu Leu Phe Asn Leu Met Tyr Leu Ala Ala Glu Arg Gly Val Arg
 100 105 110

Val Arg Leu Leu Leu Asp Asp Asn Asn Thr Arg Gly Leu Asp Asp Leu
 115 120 125

Leu Leu Ala Leu Asp Ser His Pro Asn Ile Val Arg Leu Phe Asn Pro
 130 135 140

Phe Val Leu Arg Lys Trp Arg Ala Leu Gly Tyr Leu Thr Asp Phe Pro
 145 150 155 160

Arg Leu Asn Arg Arg Met His Asn Lys Ser Phe Thr Ala Asp Asn Arg
 165 170 175

Ala Thr Ile Leu Gly Gly Arg Asn Ile Gly Asp Glu Tyr Phe Lys Val
 180 185 190

Gly Glu Asp Thr Val Phe Ala Asp Leu Asp Ile Leu Ala Thr Gly Ser
 195 200 205

Val Val Gly Glu Val Ser His Asp Phe Asp Arg Tyr Trp Ala Ser His
 210 215 220

Ser Ala His Asn Ala Thr Arg Ile Ile Arg Ser Gly Asn Ile Gly Lys
 225 230 235 240

Gly Leu Gln Ala Leu Gly Tyr Asn Asp Glu Thr Ser Arg His Ala Leu
 245 250 255

Leu Arg Tyr Arg Glu Thr Val Glu Gln Ser Pro Leu Tyr Gln Lys Ile
 260 265 270

Gln Thr Gly Arg Ile Asp Trp Gln Ser Val Gln Thr Arg Leu Ile Ser
 275 280 285

Asp Ser Pro Ala Lys Gly Leu Asp Arg Asp Arg Arg Lys Pro Pro Ile
 290 295 300

Ala Gly Arg Leu Gln Asp Ala Leu Lys Gln Pro Glu Lys Ser Val Tyr
 305 310 315 320

Leu Val Ser Pro Tyr Phe Val Pro Thr Lys Ser Gly Thr Asp Ala Leu
 325 330 335

Ala Lys Leu Val Gln Asp Gly Ile Asp Val Thr Val Leu Thr Asn Ser
 340 345 350

Leu Gln Ala Thr Asp Val Ala Ala Val His Ser Gly Tyr Val Lys Tyr
 355 360 365

Arg Lys Pro Leu Leu Lys Ala Gly Ile Lys Leu Tyr Glu Leu Gln Pro
 370 375 380

Asn His Ala Val Pro Ala Thr Lys Asp Lys Gly Leu Thr Gly Ser Ser
 385 390 395 400
 Val Thr Ser Leu His Ala Lys Thr Phe Ile Val Asp Gly Lys Arg Ile
 405 410 415
 Phe Ile Gly Ser Phe Asn Leu Asp Pro Arg Ser Ala Arg Leu Asn Thr
 420 425 430
 Glu Met Gly Val Val Ile Glu Ser Pro Lys Ile Ala Glu Gln Met Glu
 435 440 445
 Arg Thr Leu Ala Asp Thr Thr Pro Glu Tyr Ala Tyr Arg Val Thr Leu
 450 455 460
 Asp Lys His Asn Arg Leu Gln Trp His Asp Pro Ala Thr Arg Lys Thr
 465 470 475 480
 Tyr Pro Asn Glu Pro Glu Ala Lys Leu Trp Lys Arg Ile Ala Ala Lys
 485 490 495
 Ile Leu Ser Leu Leu Pro Ile Glu Gly Leu Leu
 500 505

<210> 2975

<211> 1527

<212> DNA

<213> *Neisseria meningitidis*

<400> 2975

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 ctggacaaca tcttgcaaat ccggcacacc cctcatacca acgggctatc cgatatctat 180
 ctgttgaacg acccccacga agcctttgcc gccgcgcgcg cccttatcga atctgccgaa 240
 cacagcctcg atttgcaata ctacatctgg cgcaacgaca ttcccggcag gctgctgttc 300
 aacctcgtgt accttgccgc agaacgcggt gtgcgcgtac gcctgctgtt ggacgacaac 360
 aacacgcgcg gattggacga cctcctgctt gccctcgaca gccatcccaa tatcgaagtg 420
 cgctgttca accccttcgt cttacgaaaa tggcgcgcac tcggctacct gaccgacttc 480
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 gtgcaggacg gcatagacgt taccgttctg accaactcgc tgcaggcgac cgacgttgcc 1080
 gccgtccatt ccggctatgt caaataccga aaaccgctgc tcaaagccgg catcaaactc 1140
 tacgagctgc aaccacaacca tgccgtcccc gccacaaaag acaaaggcct gaccggcagc 1200
 tccgtaacca gcctgcacgc caaaaccttc attgtggacg gcaaacgcat cttcatcggt 1260
 tcgttcaacc tcgacccccg ttccgcgcgt ctcaacaccg aaatgggcgt tgttatcgaa 1320
 agccccaaaa tcgcagaaca gatggagcgc acccttgccg ataccacacc cgctacgcc 1380
 taccgcgtta ccctcgacag gcacaaccgc ctgcaatggc acgatcccgc caccgaaaa 1440
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1527

<210> 2976

<211> 508

<212> PRT

<213> *Neisseria meningitidis*

<400> 2976

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Cys	Ser	Ser	Trp	Leu	Pro	Pro	Leu	Glu	Glu	Arg	Thr	Glu	Ser	Arg	His
			20					25					30		

Phe	Asn	Thr	Ser	Lys	Pro	Val	Arg	Leu	Asp	Asn	Ile	Leu	Gln	Ile	Arg
			35				40					45			

His	Thr	Pro	His	Thr	Asn	Gly	Leu	Ser	Asp	Ile	Tyr	Leu	Leu	Asn	Asp
	50					55					60				

Pro	His	Glu	Ala	Phe	Ala	Ala	Arg	Ala	Ala	Leu	Ile	Glu	Ser	Ala	Glu
65					70					75					80

His	Ser	Leu	Asp	Leu	Gln	Tyr	Tyr	Ile	Trp	Arg	Asn	Asp	Ile	Ser	Gly
				85					90					95	

Arg	Leu	Leu	Phe	Asn	Leu	Val	Tyr	Leu	Ala	Ala	Glu	Arg	Gly	Val	Arg
			100					105					110		

Val	Arg	Leu	Leu	Leu	Asp	Asp	Asn	Asn	Thr	Arg	Gly	Leu	Asp	Asp	Leu
		115					120					125			

Leu	Leu	Ala	Leu	Asp	Ser	His	Pro	Asn	Ile	Glu	Val	Arg	Leu	Phe	Asn
		130				135						140			

Pro	Phe	Val	Leu	Arg	Lys	Trp	Arg	Ala	Leu	Gly	Tyr	Leu	Thr	Asp	Phe
145					150					155					160

Pro	Arg	Leu	Asn	Arg	Arg	Met	His	Asn	Lys	Ser	Phe	Thr	Ala	Asp	Asn
			165						170					175	

Arg	Ala	Thr	Ile	Leu	Gly	Gly	Arg	Asn	Ile	Gly	Asp	Glu	Tyr	Phe	Lys
			180					185					190		

Val	Gly	Glu	Asp	Thr	Val	Phe	Ala	Asp	Leu	Asp	Ile	Leu	Ala	Thr	Gly
		195					200					205			

Ser	Val	Val	Gly	Glu	Val	Ser	His	Asp	Phe	Asp	Arg	Tyr	Trp	Ala	Ser
	210					215					220				

His	Ser	Ala	His	Asn	Ala	Thr	Arg	Ile	Ile	Arg	Ser	Gly	Asp	Ile	Gly
225				230						235					240

Lys	Gly	Leu	Gln	Ala	Leu	Gly	Tyr	Asn	Asp	Glu	Thr	Ser	Arg	His	Ala
			245						250					255	

Leu Leu Arg Tyr Arg Glu Thr Val Glu Gln Ser Pro Leu Tyr Gln Lys
260 265 270

Ile Gln Thr Gly Cys Ile Asp Trp Gln Ser Val Arg Thr Arg Leu Ile
275 280 285

Ser Asp Asp Pro Ala Lys Gly Leu Asp Arg Asp Arg Arg Lys Pro Pro
290 295 300

Ile Ala Gly Arg Leu Gln Asp Ala Leu Lys Gln Pro Glu Lys Ser Val
305 310 315 320

Tyr Leu Val Ser Pro Tyr Phe Val Pro Thr Lys Ser Gly Thr Asp Ala
325 330 335

Leu Ala Lys Leu Val Gln Asp Gly Ile Asp Val Thr Val Leu Thr Asn
340 345 350

Ser Leu Gln Ala Thr Asp Val Ala Ala Val His Ser Gly Tyr Val Lys
355 360 365

Tyr Arg Lys Pro Leu Leu Lys Ala Gly Ile Lys Leu Tyr Glu Leu Gln
370 375 380

Pro Asn His Ala Val Pro Ala Thr Lys Asp Lys Gly Leu Thr Gly Ser
385 390 395 400

Ser Val Thr Ser Leu His Ala Lys Thr Phe Ile Val Asp Gly Lys Arg
405 410 415

Ile Phe Ile Gly Ser Phe Asn Leu Asp Pro Arg Ser Ala Arg Leu Asn
420 425 430

Thr Glu Met Gly Val Val Ile Glu Ser Pro Lys Ile Ala Glu Gln Met
435 440 445

Glu Arg Thr Leu Ala Asp Thr Thr Pro Ala Tyr Ala Tyr Arg Val Thr
450 455 460

Leu Asp Arg His Asn Arg Leu Gln Trp His Asp Pro Ala Thr Arg Lys
465 470 475 480

Thr Tyr Pro Asn Glu Pro Glu Ala Lys Leu Trp Lys Arg Ile Ala Ala
485 490 495

Lys Ile Leu Ser Leu Leu Pro Ile Glu Gly Leu Leu
500 505

<210> 2977

<211> 1527

<212> DNA

<213> Neisseria meningitidis

<400> 2977

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```

<210> 2978

<211> 508

<212> PRT

<213> *Neisseria meningitidis*

<400> 2978

```

Met Lys Thr Arg Ser Leu Ile Ser Leu Leu Cys Leu Leu Leu Cys Ser
  1                      5                      10                      15

```

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Cys Ser Ser Trp Leu Pro Pro Leu Glu Glu Arg Thr Glu Ser Arg His
      20                      25                      30

```

```

Phe Asn Thr Ser Lys Pro Val Arg Leu Asp Asn Ile Leu Gln Ile Arg
      35                      40                      45

```

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His Thr Pro His Thr Asn Gly Leu Ser Asp Ile Tyr Leu Leu Asn Asp
      50                      55                      60

```

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Pro His Glu Ala Phe Ala Ala Arg Ala Ala Leu Ile Glu Ser Ala Glu
      65                      70                      75                      80

```

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His Ser Leu Asp Leu Gln Tyr Tyr Ile Trp Arg Asn Asp Ile Ser Gly
      85                      90                      95

```

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Arg Leu Leu Phe Asn Leu Val Tyr Leu Ala Ala Glu Arg Gly Val Arg
     100                      105                      110

```

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Val Arg Leu Leu Leu Asp Asp Asn Asn Thr Arg Gly Leu Asp Asp Leu
     115                      120                      125

```

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Leu Leu Ala Leu Asp Ser His Pro Asn Ile Glu Val Arg Leu Phe Asn

```


130	135	140
Pro Phe Val Leu Arg Lys Trp Arg Ala Leu Gly Tyr Leu Thr Asp Phe		
145	150	155 160
Pro Arg Leu Asn Arg Arg Met His Asn Lys Ser Phe Thr Ala Asp Asn		
	165	170 175
Arg Ala Thr Ile Leu Gly Gly Arg Asn Ile Gly Asp Glu Tyr Phe Lys		
	180	185 190
Val Gly Glu Asp Thr Val Phe Ala Asp Leu Asp Ile Leu Ala Thr Gly		
	195	200 205
Ser Val Val Gly Glu Val Ser His Asp Phe Asp Arg Tyr Trp Ala Ser		
	210	215 220
His Ser Ala His Asn Ala Thr Arg Ile Ile Arg Ser Gly Asn Ile Gly		
225	230	235 240
Lys Gly Leu Gln Ala Leu Gly Tyr Asn Asp Glu Thr Ser Arg His Ala		
	245	250 255
Leu Leu Arg Tyr Arg Glu Thr Val Glu Gln Ser Pro Leu Tyr Gln Lys		
	260	265 270
Ile Gln Thr Gly Arg Ile Asp Trp Gln Ser Val Gln Thr Arg Leu Ile		
	275	280 285
Ser Asp Asp Pro Ala Lys Gly Leu Asp Arg Asp Arg Arg Lys Pro Pro		
	290	295 300
Ile Ala Gly Arg Leu Gln Asp Ala Leu Lys Gln Pro Glu Lys Ser Val		
305	310	315 320
Tyr Leu Val Ser Pro Tyr Phe Val Pro Thr Lys Ser Gly Thr Asp Ala		
	325	330 335
Leu Ala Lys Leu Val Gln Asp Gly Ile Asp Val Thr Val Leu Thr Asn		
	340	345 350
Ser Leu Gln Ala Thr Asp Val Ala Ala Val His Ser Gly Tyr Val Lys		
	355	360 365
Tyr Arg Lys Pro Leu Leu Lys Ala Gly Ile Lys Leu Tyr Glu Leu Gln		
	370	375 380
Pro Asn His Ala Val Pro Ala Thr Lys Asp Lys Gly Leu Thr Gly Ser		
385	390	395 400
Ser Val Thr Ser Leu His Ala Lys Thr Phe Ile Val Asp Gly Lys Arg		
	405	410 415
Ile Phe Ile Gly Ser Phe Asn Leu Asp Pro Arg Ser Ala Arg Leu Asn		
	420	425 430
Thr Glu Met Gly Val Val Ile Glu Ser Pro Lys Ile Ala Glu Gln Met		

435

440

445

Glu Arg Thr Leu Ala Asp Thr Ser Pro Glu Tyr Ala Tyr Arg Val Thr
 450 455 460

Leu Asp Arg His Asn Arg Leu Gln Trp His Asp Pro Ala Thr Arg Lys
 465 470 475 480

Thr Tyr Pro Asn Glu Pro Glu Ala Lys Leu Trp Lys Arg Ile Ala Ala
 485 490 495

Lys Ile Leu Ser Leu Leu Pro Ile Glu Ser Leu Leu
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<210> 2979

<211> 2379

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2979

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<210> 2980

<211> 792

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 2980

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Leu Ser Arg Glu Lys Gln Arg Tyr Glu His Pro Leu Pro Ser Arg Glu
      20              25              30

Trp Ile Ile Glu Leu Leu Glu Arg Lys Gly Val Pro Ser Lys Ile Glu
      35              40              45

Ser Leu Ala Arg Glu Leu Ser Ile Thr Glu Asp Glu Tyr Val Phe Phe
      50              55              60

Glu Arg Arg Leu Lys Ala Met Ala Arg Asp Gly Gln Val Leu Ile Asn
      65              70              75              80

Arg Arg Gly Ala Val Cys Ala Ala Asp Lys Leu Asp Leu Val Lys Cys
      85              90              95

Arg Val Glu Ala His Lys Asp Gly Phe Gly Phe Ala Val Pro Leu Met
      100             105             110

Pro Met Asp Glu Gly Asp Phe Val Leu Tyr Glu Arg Gln Met Arg Gly
      115             120             125

Val Met His Gly Asp Thr Val Thr Val Arg Pro Ala Gly Met Asp Arg
      130             135             140

Arg Gly Arg Arg Glu Gly Thr Phe Leu Asp Ile Val Glu Arg Ala Gln
      145             150             155             160

Ser Lys Val Val Gly Arg Phe Tyr Met Asp Arg Gly Val Ala Ile Leu
      165             170             175

Glu Pro Glu Asp Lys Arg Leu Asn Gln Ser Ile Val Leu Glu Pro Asp
      180             185             190

Gly Val Ala Arg Phe Lys Pro Glu Ser Gly Gln Val Ile Val Gly Lys
      195             200             205

Ile Glu Val Tyr Pro Glu Gln Asn Arg Pro Ala Val Ala Lys Ile Ile
      210             215             220

Glu Val Leu Gly Asp Tyr Ala Asp Ser Gly Met Glu Ile Glu Ile Ala
      225             230             235             240

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Val	Arg	Lys	His	His	Leu	Pro	His	Arg	Phe	Ser	Glu	Ala	Cys	Ala	Lys		
				245					250					255			
Ser	Ala	Lys	Lys	Ile	Pro	Asp	His	Val	Arg	Lys	Ser	Asp	Leu	Lys	Gly		
			260					265					270				
Arg	Val	Asp	Leu	Cys	Asp	Leu	Pro	Leu	Val	Thr	Ile	Asp	Gly	Glu	Thr		
		275					280					285					
Ala	Arg	Asp	Phe	Asp	Asp	Ala	Val	Phe	Ala	Glu	Lys	Val	Gly	Arg	Asn		
	290					295					300						
Tyr	Arg	Leu	Val	Val	Ala	Ile	Ala	Asp	Val	Ser	His	Tyr	Val	Arg	Pro		
305					310					315					320		
Asp	Asp	Ala	Ile	Asp	Ala	Asp	Ala	Gln	Glu	Arg	Ser	Thr	Ser	Val	Tyr		
				325					330					335			
Phe	Pro	Arg	Arg	Met	Ile	Pro	Met	Leu	Pro	Glu	Asn	Leu	Ser	Asn	Gly		
				340				345					350				
Ile	Cys	Ser	Leu	Asn	Pro	Asp	Val	Glu	Arg	Leu	Cys	Met	Val	Cys	Asp		
		355					360					365					
Met	Val	Val	Thr	Tyr	Ala	Gly	Asn	Ile	Lys	Glu	Tyr	Arg	Phe	Tyr	Pro		
	370					375					380						
Ala	Val	Met	Arg	Ser	His	Ala	Arg	Leu	Thr	Tyr	Asn	Gln	Val	Trp	Lys		
385					390					395					400		
Trp	Leu	Ser	Asp	Gly	Ile	Gly	Asn	Pro	His	Lys	Ala	Gln	Ile	Asp	Thr		
				405					410					415			
Leu	Tyr	Lys	Leu	Phe	Lys	Ile	Leu	Gln	Lys	Lys	Arg	Leu	Ala	Arg	Gly		
			420					425					430				
Ala	Val	Glu	Phe	Glu	Ser	Val	Glu	Thr	Gln	Met	Ile	Phe	Asp	Asp	Asn		
		435					440					445					
Gly	Lys	Ile	Glu	Lys	Ile	Val	Pro	Val	Val	Arg	Asn	Asp	Ala	His	Lys		
	450					455					460						
Leu	Ile	Glu	Glu	Cys	Met	Leu	Ala	Ala	Asn	Val	Cys	Ala	Ala	Asp	Phe		
465					470					475					480		
Leu	Leu	Lys	Asn	Lys	His	Thr	Ala	Leu	Phe	Arg	Asn	His	Leu	Gly	Pro		
				485					490					495			
Thr	Pro	Glu	Lys	Leu	Ala	Thr	Leu	Arg	Glu	Gln	Leu	Gly	Leu	Leu	Gly		
			500					505					510				
Leu	Gln	Leu	Gly	Gly	Gly	Asp	Asn	Pro	Ser	Pro	Lys	Asp	Tyr	Ala	Ala		
		515					520					525					
Leu	Ala	Glu	Gln	Phe	Lys	Gly	Arg	Pro	Asp	Ala	Glu	Leu	Leu	Gln	Val		
	530					535					540						

Met Met Leu Arg Ser Met Gln Gln Ala Val Tyr Glu Pro His Cys Glu
545 550 555 560

Gly His Phe Gly Leu Ala Tyr Glu Ala Tyr Ala His Phe Thr Ser Pro
565 570 575

Ile Arg Arg Tyr Pro Asp Leu Thr Val His Arg Ala Ile Lys Ala Val
580 585 590

Leu Asn Arg Lys Thr Tyr Thr Pro Asn Lys Ser Trp Gln Ala Leu Gly
595 600 605

Val His Thr Ser Phe Cys Glu Arg Arg Ala Asp Asp Ala Gly Arg Asp
610 615 620

Val Glu Asn Trp Leu Lys Thr Tyr Tyr Met Arg Asp Lys Val Gly Glu
625 630 635 640

Ile Phe Glu Gly Lys Ile Ser Arg Gly Val Ala Asn Phe Gly Ile Phe
645 650 655

Val Thr Leu Asp Asp Ile His Ile Asp Gly Leu Val His Ile Ser Asp
660 665 670

Leu Gly Glu Asp Tyr Phe Asn Phe Arg Pro Glu Ile Met Ala Ile Glu
675 680 685

Gly Glu Arg Ser Gly Ile Arg Phe Asn Met Gly Asp Arg Val Ala Val
690 695 700

Arg Val Ala Arg Ala Asp Leu Asp Asp Gly Lys Ile Asp Phe Val Leu
705 710 715 720

Ile Ala Gly Glu Ser Gly Arg Arg Arg Lys Val Lys Leu Ser Ala Ser
725 730 735

Ala Lys Pro Ala Gly Ala Ala Gly Lys Gly Lys Ser Lys Thr Thr Ala
740 745 750

Glu Lys Lys Thr Ala Arg Cys Gly Lys Val Arg Gly Arg Gly Val Pro
755 760 765

Ala Val Ala Glu Ser Gly Lys Lys Ala Lys Lys Pro Val Pro Ile Lys
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Val Lys Lys Arg Lys Gly Lys Ser
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<210> 2981

<211> 1926

<212> DNA

<213> Neisseria meningitidis

<400> 2981

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1926

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<210> 2982
 <211> 641
 <212> PRT
 <213> *Neisseria meningitidis*

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<400> 2982
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Phe Tyr Met Asp Arg Gly Val Ala Ile Leu Glu Pro Glu Asp Lys Arg
 20             25            30

Leu Asn Gln Ser Ile Val Leu Glu Pro Asp Gly Val Ala Arg Phe Lys
 35             40            45

Pro Glu Ser Gly Gln Val Ile Val Gly Glu Ile Glu Val Tyr Pro Glu
 50             55            60

Gln Asn Arg Pro Ala Val Ala Lys Ile Ile Glu Val Leu Gly Asp Tyr
 65             70            75            80

Ala Asp Ser Gly Met Glu Ile Glu Ile Ala Val Arg Lys His His Leu

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	85	90	95
Pro His Gln Phe Ser Glu Ala Cys	100	Ala Lys Ala Ala Lys Lys Ile Pro	110
Val His Val Arg Lys Ser Asp	115	Leu Lys Gly Arg Val Asp	125
Leu Pro Leu Val Thr Ile Asp	130	Gly Glu Thr Ala Arg Asp Phe Asp Asp	140
Ala Val Phe Ala Glu Lys Val Gly Arg Asn Tyr Arg	145	Leu Val Val Ala	160
Ile Ala Asp Val Ser His Tyr Val Arg	165	Pro Asp Asp Val Ile Asp Ala	175
Asp Ala Gln Glu Arg Ser Thr Ser Val Tyr Phe Pro Arg Arg Val Ile	180		190
Pro Met Leu Pro Glu Asn Leu Ser Asn Gly Ile Cys Ser Leu Asn Pro	195		205
Asp Val Glu Arg Leu Cys Met Val Cys Asp Met Val Val Thr Tyr Ala	210		220
Gly Asn Ile Lys Glu Tyr Arg Phe Tyr Pro Ala Val Met Arg Ser His	225		240
Ala Arg Leu Thr Tyr Asn Gln Val Trp Lys Trp Ile Ser Asp Gly Ile	245		255
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Ile Leu Gln Lys Lys Arg Phe Glu Arg Gly Ala Val Glu Phe Glu Ser	275		285
Val Glu Thr Gln Met Ile Phe Asp Asp Asn Gly Lys Ile Glu Lys Ile	290		300
Val Pro Val Val Arg Asn Asp Ala His Lys Leu Ile Glu Glu Cys Met	305		320
Leu Ala Ala Asn Val Cys Ala Ala Asp Phe Leu Leu Lys Asn Lys His	325		335
Thr Ala Leu Phe Arg Asn His Leu Gly Pro Thr Pro Glu Lys Leu Ala	340		350
Thr Leu Arg Glu Gln Leu Gly Leu Leu Gly Leu Gln Leu Gly Gly Gly	355		365
Asp Asn Pro Ser Pro Lys Asp Tyr Ala Ala Leu Val Glu Gln Phe Lys	370		380
Gly Arg Pro Asp Ala Glu Leu Leu Gln Val Met Met Leu Arg Ser Met			

385		390		395		400
Gln Gln Ala Val Tyr Glu Pro His Cys Asp Gly His Phe Gly Leu Ala	405		410		415	
Tyr Glu Ala Tyr Ala His Phe Thr Ser Pro Ile Arg Arg Tyr Pro Asp	420		425		430	
Leu Thr Val His Arg Ala Ile Lys Ala Val Leu Asn Gln Gln Thr Tyr	435		440		445	
Thr Pro Lys Lys Ser Trp Gln Ala Leu Gly Val His Thr Ser Phe Cys	450		455		460	
Glu Arg Arg Ala Asp Asp Ala Ser Arg Asp Val Glu Asn Trp Leu Lys	465		470		475	480
Thr Tyr Tyr Met Arg Asp Lys Val Gly Glu Val Phe Glu Gly Lys Ile		485		490		495
Ser Gly Met Thr Ser Phe Gly Ile Phe Val Thr Leu Asp Gly Ile His		500		505		510
Ile Asp Gly Leu Val His Ile Ser Asp Leu Gly Glu Asp Tyr Phe Asn		515		520		525
Phe Arg Pro Glu Ile Met Ala Ile Glu Gly Glu Arg Ser Gly Ile Arg		530		535		540
Phe Asn Met Gly Asp Arg Val Ala Val Arg Val Ala Arg Ala Asp Leu		545		550		555
Asp Asp Gly Lys Ile Asp Phe Val Leu Ile Ala Gly Gly Ser Gly Arg		565		570		575
Gly Arg Lys Val Lys Ser Ser Ala Ser Ala Lys Pro Ala Gly Thr Ala		580		585		590
Gly Lys Gly Lys Pro Lys Thr Ala Ala Glu Lys Lys Thr Ala Arg Gly		595		600		605
Gly Lys Val Arg Gly Arg Gly Ala Ser Ala Ala Ala Glu Ser Arg Lys		610		615		620
Lys Ala Lys Lys Pro Val Pro Ile Lys Val Lys Lys Arg Lys Gly Lys		625		630		635
						640
Ser						

<210> 2983
 <211> 2376
 <212> DNA
 <213> Neisseria meningitidis

<400> 2983

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<210> 2984

<211> 791

<212> PRT

<213> *Neisseria meningitidis*

<400> 2984

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Leu Ser Arg Glu Lys Gln Arg Tyr Glu His Pro Leu Pro Ser Arg Glu
      20             25             30
```

```
Trp Ile Ile Glu Leu Leu Glu Arg Lys Gly Val Pro Ser Lys Ile Glu
      35             40             45
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Ala Leu Val Arg Glu Leu Ser Ile Lys Glu Glu Glu Tyr Glu Phe Phe
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 Glu Arg Arg Leu Lys Ala Met Ala Arg Asp Gly Gln Val Leu Ile Asn
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 Arg Arg Gly Ala Val Cys Ala Ala Asp Lys Leu Asp Leu Val Lys Cys
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 Arg Val Lys Ala His Lys Asp Arg Phe Gly Phe Ala Val Pro Leu Thr
 100 105 110
 Pro Ala Lys Asp Gly Asp Phe Val Leu Tyr Glu Arg Gln Met Arg Gly
 115 120 125
 Ile Met His Gly Asp Ile Val Thr Val Arg Pro Ala Gly Met Asp Gly
 130 135 140
 Arg Gly Arg Arg Glu Gly Thr Val Leu Asp Ile Val Glu Arg Ala Gln
 145 150 155 160
 Ser Lys Val Val Gly Arg Phe Xaa Met Asp Arg Gly Val Ala Ile Leu
 165 170 175
 Glu Pro Glu Asp Lys Arg Leu Asn Gln Ser Ile Val Leu Glu Pro Asp
 180 185 190
 Gly Val Ala Arg Phe Lys Pro Glu Ser Gly Gln Val Ile Val Gly Glu
 195 200 205
 Ile Glu Val Tyr Pro Glu Gln Asn Arg Pro Ala Val Ala Lys Ile Ile
 210 215 220
 Glu Val Leu Gly Asp Tyr Ala Asp Ser Gly Met Glu Ile Glu Ile Ala
 225 230 235 240
 Val Arg Lys His His Leu Pro His Gln Phe Ser Glu Ala Cys Ala Lys
 245 250 255
 Ala Ala Lys Lys Ile Pro Asp His Val Arg Lys Ser Asp Leu Lys Gly
 260 265 270
 Arg Val Asp Leu Arg Asp Leu Pro Leu Val Thr Ile Asp Gly Glu Thr
 275 280 285
 Ala Arg Asp Phe Asp Asp Ala Val Phe Ala Glu Lys Ile Gly Arg Asn
 290 295 300
 Tyr Arg Leu Val Val Ala Ile Ala Asp Val Ser His Tyr Val Arg Pro
 305 310 315 320
 Asp Asp Ala Ile Asp Thr Asp Ala Gln Glu Arg Ser Thr Ser Val Tyr
 325 330 335
 Phe Pro Arg Arg Val Ile Pro Met Leu Pro Glu Asn Leu Ser Asn Gly
 340 345 350

Ile Cys Ser Leu Asn Pro His Val Glu Arg Leu Cys Val Val Cys Asp
 355 360 365

Met Val Ile Thr Tyr Ala Gly Asn Ile Lys Glu Tyr Arg Phe Tyr Pro
 370 375 380

Ala Val Met Arg Ser His Ala Arg Leu Thr Tyr Asn Gln Val Trp Lys
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Trp Leu Ser Gly Gly Ile Glu His Pro Phe Lys Thr Gln Ile Asp Thr
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Leu Tyr Lys Leu Phe Lys Ile Leu Gln Lys Lys Arg Phe Glu Arg Gly
 420 425 430

Ala Val Glu Phe Asp Ser Ile Glu Thr Gln Met Leu Phe Asp Asp Asn
 435 440 445

Gly Lys Ile Glu Lys Ile Val Pro Val Val Arg Asn Asp Ala His Lys
 450 455 460

Leu Ile Glu Glu Cys Met Leu Ala Ala Asn Val Cys Ala Ala Asp Phe
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Leu Leu Lys Asn Lys His Thr Ala Leu Phe Arg Asn His Leu Gly Pro
 485 490 495

Thr Pro Glu Lys Leu Ala Ala Leu Arg Glu Gln Leu Gly Leu Leu Gly
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Leu Gln Leu Gly Gly Gly Asp Asn Pro Ser Pro Lys Asp Tyr Ala Ala
 515 520 525

Leu Ala Gly Gln Phe Lys Gly Arg Pro Asp Ala Glu Leu Leu Gln Val
 530 535 540

Met Met Leu Arg Ser Met Gln Gln Ala Val Tyr Glu Pro His Cys Asp
 545 550 555 560

Gly His Phe Gly Leu Ala Tyr Glu Ala Tyr Ala His Phe Thr Ser Pro
 565 570 575

Ile Arg Arg Tyr Pro Asp Leu Thr Val His Arg Ala Ile Lys Ala Val
 580 585 590

Leu Asn Gln Gln Thr Tyr Thr Pro Lys Lys Ser Trp Gln Ala Leu Gly
 595 600 605

Val His Thr Ser Phe Cys Glu Arg Arg Ala Asp Asp Ala Ser Arg Asp
 610 615 620

Val Glu Asn Trp Leu Lys Thr Tyr Tyr Met Arg Asp Lys Val Gly Glu
 625 630 635 640

Val Phe Glu Gly Lys Ile Ser Gly Met Thr Ser Phe Gly Ile Phe Val
 645 650 655

Thr Leu Asp Gly Ile His Ile Asp Gly Leu Val His Ile Ser Asp Leu
660 665 670

Gly Glu Asp Tyr Phe Asn Phe Arg Pro Glu Ile Met Ala Ile Glu Gly
675 680 685

Glu Arg Ser Gly Ile Arg Phe Asn Met Gly Asp Arg Val Ala Val Arg
690 695 700

Val Ala Arg Ala Asp Leu Asp Asp Gly Lys Ile Asp Phe Val Leu Ile
705 710 715 720

Ala Gly Gly Ser Gly Arg Gly Arg Lys Val Lys Ser Ser Ala Ser Ala
725 730 735

Lys Pro Ala Gly Thr Ala Gly Lys Gly Lys Pro Lys Thr Ala Ala Glu
740 745 750

Lys Lys Thr Ala Arg Gly Gly Lys Val Arg Gly Arg Gly Ala Ser Ala
755 760 765

Ala Ala Glu Ser Arg Lys Lys Ala Lys Lys Pro Val Pro Ile Lys Val
770 775 780

Lys Lys Arg Lys Gly Lys Ser
785 790

<210> 2985

<211> 1383

<212> DNA

<213> Neisseria gonorrhoeae

<400> 2985

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<210> 2986

<211> 459

<212> PRT

<213> Neisseria gonorrhoeae

<400> 2986

Met Thr Pro Phe Thr Leu Lys Lys Thr Val Leu Leu Leu Gly Thr Ala
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Phe Ala Ala Ala Ser Val His Ala Ser Gly Tyr His Phe Gly Thr Gln
 20 25 30

Ser Val Asn Ala Gln Ser Thr Ala Asn Ala Ala Asp Ala Ser Thr Ile
 35 40 45

Phe Tyr Asn Pro Ala Gly Leu Thr Lys Leu Asp Ser Ser Gln Ile Ser
 50 55 60

Val Asn Ala Asn Ile Val Leu Pro Ser Ile His Tyr Glu Ala Asp Ser
 65 70 75 80

Ala Thr Asp Phe Thr Gly Leu Pro Val Gln Gly Ser Lys Asn Gly Lys
 85 90 95

Ile Thr Lys Thr Thr Val Ala Pro His Ile Tyr Gly Ala Tyr Lys Val
 100 105 110

Asn Asp Asn Leu Thr Val Gly Leu Gly Val Tyr Val Pro Phe Gly Ser
 115 120 125

Ala Thr Glu Tyr Glu Lys Asp Ser Val Leu Arg His Asn Ile Asn Lys
 130 135 140

Leu Gly Leu Thr Ser Ile Ala Val Glu Pro Val Ala Ala Trp Lys Leu
 145 150 155 160

Asn Glu Arg His Ser Phe Gly Ala Gly Ile Ile Ala Gln His Asn Ser
 165 170 175

Ala Glu Leu Arg Lys Tyr Ala Asp Gly Ile Pro Lys Lys Ala Gln Met
 180 185 190

Leu Gln Ala Thr Pro Ser Asn Pro Thr Ala Ala Ala Gln Ile Lys Ala
 195 200 205

Asp Gly His Ala Asp Val Lys Gly Ser Asp Trp Gly Val Gly Tyr Gln
 210 215 220

Leu Ala Trp Met Trp Asp Ile Asn Asp Arg Ala Arg Val Gly Val Asn
 225 230 235 240

Tyr Arg Ser Lys Val Ser His Thr Leu Lys Gly Asp Ala Glu Trp Ala
 245 250 255


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<210> 2988

<211> 466

<212> PRT

<213> *Neisseria meningitidis*

<400> 2988

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Phe Ala Ala Ala Ser Val His Ala Ser Gly Tyr His Phe Gly Thr Gln
      20              25              30

Ser Val Asn Ala Gln Ser Thr Ala Asn Ala Ala Ala Glu Ala Ala
      35              40              45

Asp Ala Ser Thr Ile Phe Tyr Asn Pro Ala Gly Leu Thr Lys Leu Asp
      50              55              60

Ser Ser Gln Ile Ser Val Asn Ala Asn Ile Val Leu Pro Ser Ile His
      65              70              75              80

Tyr Glu Ala Asp Ser Ala Thr Asp Phe Thr Gly Leu Pro Val Gln Gly
      85              90              95

Ser Lys Ser Gly Lys Ile Thr Lys Thr Thr Val Ala Pro His Ile Tyr
      100             105             110

Gly Ala Tyr Lys Val Asn Asp Asn Leu Thr Val Gly Leu Gly Val Tyr
      115             120             125

Val Pro Phe Gly Ser Ala Thr Glu Tyr Glu Lys Asp Ser Val Leu Arg
      130             135             140

His Asn Ile Asn Lys Leu Gly Leu Thr Ser Ile Ala Val Glu Pro Val
      145             150             155             160

Ala Ala Trp Lys Leu Asn Asp Arg His Ser Phe Gly Ala Gly Ile Ile
      165             170             175

Ala Gln His Thr Ser Ala Glu Leu Arg Lys Tyr Ala Asp Trp Gly Ile
      180             185             190

```

Lys Ser Lys Ala Glu Ile Leu Thr Ala Lys Pro Pro Lys Pro Asn Gly
 195 200 205
 Val Ala Glu Ala Ala Lys Ile Gln Ala Asp Gly His Ala Asp Val Lys
 210 215 220
 Gly Ser Asp Trp Gly Phe Gly Tyr Gln Leu Ala Trp Met Trp Asp Ile
 225 230 235 240
 Asn Asp Arg Ala Arg Val Gly Val Asn Tyr Arg Ser Lys Val Ser His
 245 250 255
 Thr Leu Lys Gly Asp Ala Glu Trp Ala Ala Asp Gly Ala Ala Ala Lys
 260 265 270
 Ala Met Trp Ser Thr Met Leu Ala Ala Asn Gly Tyr Thr Ala Asn Glu
 275 280 285
 Lys Ala Arg Val Lys Ile Val Thr Pro Glu Ser Leu Ser Val His Gly
 290 295 300
 Met Tyr Lys Val Ser Asp Lys Ala Asp Leu Phe Gly Asp Val Thr Trp
 305 310 315 320
 Thr Arg His Ser Arg Phe Asp Lys Ala Glu Leu Val Phe Glu Lys Glu
 325 330 335
 Lys Thr Val Val Lys Gly Lys Ser Asp Arg Thr Thr Ile Thr Pro Asn
 340 345 350
 Trp Arg Asn Thr Tyr Lys Val Gly Phe Gly Gly Ser Tyr Gln Ile Ser
 355 360 365
 Glu Pro Leu Gln Leu Arg Ala Gly Ile Ala Phe Asp Lys Ser Pro Val
 370 375 380
 Arg Asn Ala Asp Tyr Arg Met Asn Ser Leu Pro Asp Gly Asn Arg Ile
 385 390 395 400
 Trp Phe Ser Ala Gly Met Lys Tyr His Ile Gly Lys Asn His Val Val
 405 410 415
 Asp Ala Ala Tyr Thr His Ile His Ile Asn Asp Thr Ser Tyr Arg Thr
 420 425 430
 Ala Lys Ala Ser Gly Asn Asp Val Asp Ser Lys Gly Ala Ser Ser Ala
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 Arg Phe Lys Asn His Ala Asp Ile Ile Gly Leu Gln Tyr Thr Tyr Lys
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<210> 2989

<211> 1395

<212> DNA

<213> *Neisseria meningitidis*

<400> 2989

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<210> 2990

<211> 464

<212> PRT

<213> *Neisseria meningitidis*

<400> 2990

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Met Thr Pro Ser Ala Leu Lys Lys Thr Val Leu Leu Leu Gly Thr Ala
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Phe Ala Ala Ala Ser Ala Gln Ala Ser Gly Tyr His Phe Gly Thr Gln
      20                      25                     30

Ser Val Asn Ala Gln Ser Thr Ala Asn Ala Ala Ala Ala Glu Ala Ala
      35                      40                     45

Asp Ala Ser Thr Ile Phe Tyr Asn Pro Ala Gly Leu Thr Lys Leu Asp
      50                      55                     60

Ser Ser Gln Ile Ser Val Asn Ala Asn Ile Val Leu Pro Ser Ile His
      65                      70                     75                     80

Tyr Glu Ala Asp Ser Ala Thr Asp Phe Thr Gly Leu Pro Val Gln Gly
      85                      90                     95

Ser Lys Ser Gly Lys Ile Thr Lys Thr Thr Val Ala Pro His Ile Tyr
      100                     105                     110
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Gly	Ala	Tyr	Lys	Val	Asn	Asp	Asn	Leu	Thr	Val	Gly	Leu	Gly	Val	Tyr	115	120	125
Val	Pro	Phe	Gly	Ser	Ala	Thr	Glu	Tyr	Glu	Lys	Asp	Ser	Val	Leu	Arg	130	135	140
His	Asn	Ile	Asn	Lys	Leu	Gly	Leu	Thr	Ser	Ile	Ala	Val	Glu	Pro	Val	145	150	155
Ala	Ala	Trp	Lys	Leu	Asn	Glu	Arg	His	Ser	Phe	Gly	Ala	Gly	Ile	Ile	165	170	175
Ala	Gln	His	Thr	Ser	Ala	Glu	Leu	Arg	Lys	Tyr	Ala	Asp	Trp	Gly	Ile	180	185	190
Met	Glu	Lys	Ala	Lys	Ala	Leu	Lys	Glu	Thr	Pro	Pro	Asn	Pro	Thr	Lys	195	200	205
Ala	Ala	Gln	Ile	Lys	Ala	Asp	Gly	His	Ala	Asp	Val	Lys	Gly	Ser	Asp	210	215	220
Trp	Gly	Phe	Gly	Tyr	Gln	Leu	Ala	Trp	Met	Trp	Asp	Ile	Asn	Asp	Arg	225	230	235
Ala	Arg	Val	Gly	Val	Asn	Tyr	Arg	Ser	Lys	Val	Ser	His	Thr	Leu	Lys	245	250	255
Gly	Asp	Ala	Glu	Trp	Ala	Ala	Asp	Asp	Ala	Met	Ala	Lys	Gln	Leu	Trp	260	265	270
Asp	Ala	Asn	Lys	Leu	Ala	Leu	Leu	Gly	Tyr	Thr	Pro	Ser	Glu	Lys	Ala	275	280	285
Arg	Val	Lys	Ile	Val	Thr	Pro	Glu	Ser	Leu	Ser	Val	His	Gly	Met	Tyr	290	295	300
Lys	Val	Ser	Asp	Lys	Ala	Asp	Leu	Phe	Gly	Asp	Val	Thr	Trp	Thr	Arg	305	310	315
His	Ser	Arg	Phe	Asp	Lys	Ala	Glu	Leu	Val	Phe	Glu	Lys	Glu	Lys	Thr	325	330	335
Ile	Val	Asn	Gly	Lys	Ser	Asp	Arg	Thr	Thr	Ile	Thr	Pro	Asn	Trp	Arg	340	345	350
Asn	Thr	Tyr	Lys	Val	Gly	Phe	Gly	Gly	Ser	Tyr	Gln	Ile	Ser	Glu	Pro	355	360	365
Leu	Gln	Leu	Arg	Ala	Gly	Ile	Ala	Phe	Asp	Lys	Ser	Pro	Val	Arg	Asn	370	375	380
Ala	Asp	Tyr	Arg	Met	Asn	Ser	Leu	Pro	Asp	Gly	Asn	Arg	Ile	Trp	Phe	385	390	395
Ser	Ala	Gly	Met	Lys	Tyr	His	Ile	Gly	Lys	Asn	His	Val	Val	Asp	Ala	405	410	415

Ala Tyr Thr His Ile His Ile Asn Asp Thr Ser Tyr Arg Thr Ala Lys
 420 425 430

Ala Ser Gly Asn Asp Val Asp Ser Lys Gly Ala Ser Ser Ala Arg Phe
 435 440 445

Lys Asn His Ala Asp Ile Ile Gly Leu Gln Tyr Thr Tyr Lys Phe Lys
 450 455 460

<210> 2991

<211> 1860

<212> DNA

<213> Neisseria meningitidis

<400> 2991

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aaccgtgcgg aacgctacaa aaccaaagggt tggacggctt ctgtcgaagg cggctacaac 1440
gcgcttgttg cggaaggcat tgtcggaaaa ggcaataatg tcggttttta cctacaaccg 1500
caggcgagcgt ttacctactt gggcgtaaac ggcggttta ccgacagcga ggggacggcg 1560
gtcggactgc tcggcagcgg tcagtggcaa agccgcgcgc gcattcgggc aaaaaccgct 1620
tttgctttgc gtaacggtgt caatcttcag ctttttgccg cttttaatgt tttgcacagg 1680
tcaaaatctt tcggcggtgga aatggacggc gaaaaacaga cgctggcagg caggacggca 1740
ctcgaaagggc ggttcggtat tgaagccggt tggaaaggcc atatgtccgc acgcatcgga 1800
tatggcaaaa ggacggacgg cgacaaagaa gccgcattgt cgctcaaata gctgttttga 1860

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<210> 2992

<211> 619

<212> PRT

<213> Neisseria meningitidis

<400> 2992
Met Phe Arg Ala Gln Leu Gly Ser Asn Thr Arg Ser Thr Lys Ile Gly 15
1 5 10
Asp Asp Ala Asp Phe Ser Phe Ser Asp Lys Pro Lys Pro Gly Thr Ser 30
20 25
His Tyr Phe Ser Ser Gly Lys Thr Asp Gln Asn Ser Ser Glu Tyr Gly 45
35 40
Tyr Asp Glu Ile Asn Ile Gln Gly Lys Asn Tyr Asn Ser Gly Ile Leu 60
50 55
Ala Val Asp Asn Met Pro Val Val Lys Lys Tyr Ile Thr Glu Lys Tyr 80
65 70 75
Gly Ala Asp Leu Lys Gln Ala Val Lys Ser Gln Leu Gln Asp Leu Tyr 95
85 90
Lys Thr Arg Pro Glu Ala Trp Ala Glu Asn Lys Lys Arg Thr Glu Glu 110
100 105
Ala Tyr Ile Ala Gln Phe Gly Thr Lys Phe Ser Thr Leu Lys Gln Thr 125
115 120
Met Pro Asp Leu Ile Asn Lys Leu Val Glu Asp Ser Val Leu Thr Pro 140
130 135
His Ser Asn Thr Ser Gln Thr Ser Leu Asn Asn Ile Phe Asn Lys Lys 160
145 150 155
Leu His Val Lys Ile Glu Asn Lys Ser His Val Ala Gly Gln Val Leu 175
165 170
Glu Leu Thr Lys Met Thr Leu Lys Asp Ser Leu Trp Glu Pro Arg Arg 190
180 185
His Ser Asp Ile His Thr Leu Glu Thr Ser Asp Asn Ala Arg Ile Arg 205
195 200
Leu Asn Thr Lys Asp Glu Lys Leu Thr Val His Lys Asp Tyr Ala Gly 220
210 215
Gly Ala Asp Phe Leu Phe Gly Tyr Asp Val Arg Glu Ser Asp Glu Pro 240
225 230 235
Ala Leu Thr Phe Glu Asp Lys Val Ser Gly Gln Ser Gly Val Val Leu 255
245 250
Glu Arg Arg Pro Glu Asn Leu Lys Thr Leu Asp Gly Arg Lys Leu Ile 270
260 265
Ala Ala Lys Thr Ala Asp Ser Gly Ser Phe Ala Phe Lys Gln Asn Tyr 285
275 280

Arg Gln Gly Leu Tyr Glu Leu Leu Leu Lys Gln Cys Glu Gly Gly Phe
 290 295 300

Cys Leu Gly Val Gln Arg Leu Ala Ile Pro Glu Ala Glu Ala Val Leu
 305 310 315 320

Tyr Ala Gln Gln Ala Tyr Ala Ala Asn Thr Leu Phe Gly Leu Arg Ala
 325 330 335

Ala Asp Arg Gly Asp Asp Val Tyr Ala Ala Asp Pro Ser Arg Gln Lys
 340 345 350

Leu Trp Leu Arg Phe Ile Gly Gly Arg Ser His Gln Asn Ile Arg Gly
 355 360 365

Gly Ala Ala Ala Asp Gly Trp Arg Lys Gly Val Gln Ile Gly Gly Glu
 370 375 380

Val Phe Val Arg Gln Asn Glu Gly Ser Arg Leu Ala Ile Gly Val Met
 385 390 395 400

Gly Gly Arg Ala Gly Gln His Ala Ser Val Asn Gly Lys Gly Gly Ala
 405 410 415

Ala Gly Ser Asp Leu Tyr Gly Tyr Gly Gly Gly Val Tyr Ala Ala Trp
 420 425 430

His Gln Leu Arg Asp Lys Gln Thr Gly Ala Tyr Leu Asp Gly Trp Leu
 435 440 445

Gln Tyr Gln Arg Phe Lys His Arg Ile Asn Asp Glu Asn Arg Ala Glu
 450 455 460

Arg Tyr Lys Thr Lys Gly Trp Thr Ala Ser Val Glu Gly Gly Tyr Asn
 465 470 475 480

Ala Leu Val Ala Glu Gly Ile Val Gly Lys Gly Asn Asn Val Arg Phe
 485 490 495

Tyr Leu Gln Pro Gln Ala Gln Phe Thr Tyr Leu Gly Val Asn Gly Gly
 500 505 510

Phe Thr Asp Ser Glu Gly Thr Ala Val Gly Leu Leu Gly Ser Gly Gln
 515 520 525

Trp Gln Ser Arg Ala Gly Ile Arg Ala Lys Thr Arg Phe Ala Leu Arg
 530 535 540

Asn Gly Val Asn Leu Gln Pro Phe Ala Ala Phe Asn Val Leu His Arg
 545 550 555 560

Ser Lys Ser Phe Gly Val Glu Met Asp Gly Glu Lys Gln Thr Leu Ala
 565 570 575

Gly Arg Thr Ala Leu Glu Gly Arg Phe Gly Ile Glu Ala Gly Trp Lys
 580 585 590

Gly His Met Ser Ala Arg Ile Gly Tyr Gly Lys Arg Thr Asp Gly Asp
 595 600 605

Lys Glu Ala Ala Leu Ser Leu Lys Trp Leu Phe
 610 615

<210> 2993
 <211> 1860
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2993
 atgttcagag ctcagcttgg ttcaaatact cgttctacca aaatcggcga cgatgccgat 60
 ttttcatttt cagacaagcc gaaacccggc acttcccatt atttttccag cggtaaaacc 120
 gatcaaaatt catccgaata tgggtatgac gaaatcaata tccaaggtaa aaactacaat 180
 agcggcatac tcgccgtcga taatatgccc gttgttaaga aatatattac agatacttac 240
 ggggataaatt taaaggatgc ggtaagaag caattacagg atttatacaa aacaagaccc 300
 gaagcttggg aagaaaataa aaaacggact gaggaggcgt atatagaaca gcttggacca 360
 aaatttagta tactcaaaca gaaaaacccc gatttaatta ataaattggg agaagattcc 420
 gtactcactc tcatagtaa tacatcacag actagtctca acaacatctt caataaaaaa 480
 ttacacgtca aaatcgaaaa caaatcccac gtcgccggac aggtgttggg actgaccaag 540
 atgacgctga aagattccct ttgggaaccg cgccgccatt ccgacatcca tatgctggaa 600
 acttccgata atgcccgcgt ccgcctgaac acgaaagatg aaaaactgac cgtccataaa 660
 gcgtatcagg gcggtgcgga tttcctgttc ggctacgacg tgcgggagtc ggacaaaccc 720
 gccctgacct ttgaagaaaa agtcagcggg caatccggcg tggttttgga acgccggccg 780
 gaaaatctga aaacgctcga cgggcgcaaa ctgattgcgg cggaagaggc agactctaata 840
 tcgtttgcgt ttaaacaaaa ttaccggcag ggactgtacg aattattgct caagcaatgc 900
 gaaggcggat ttgtcttggg cgtgcagcgt ttggctatcc ccgaggcggg agcggtttta 960
 tatgcccaac aggcttatgc ggcaaatact ttgttcgggc tgcgtgcgcg cgacaggggc 1020
 gacgacgtgt atgcgcgcga tccgtcccgt caaaaattgt ggctgcgctt catcggcggc 1080
 cggctgcctc aaaaataacg gggcgccgcg gctgcggacg ggcggcgcaa aggcgtgcaa 1140
 atcggcgggc aggtgtttgt acggcaaaat gaaggcagcc ggctggcaat cggcgtgatg 1200
 ggcggcaggg ctggccagca cgcatacgtc aacggcaaag gcggtgcggc aggcagttat 1260
 ttgcatggtt atggcggggg tgtttatgct gcgtggcctc agttgcgcga taaacaaacg 1320

 ggtgcgtatt tggacggctg gttgcaatac caacgtttca aacaccgcat caatgatgaa 1380
 aaccgtgcgg aacgctacaa aaccaaagggt tggacggctt ctgtcgaagg cggctacaac 1440
 gcgcttgttg cggaaggcgt tgtcggaaaa ggcaataatg tgcggtttta cctgcaaccg 1500
 caggcgaggt ttactactt gggcgtaaac ggcggtttta ccgacagcga ggggacggcg 1560
 gtcggactgc tcggcagcgg tcagtggcaa agccgcgcgc gcattcgggc aaaaacccgt 1620
 tttgctttgc gtaacggtgt caatcttcag ctttttgccg cttttaatgt tttgcacagg 1680
 tcaaaatctt tcggcgtgga aatggacggc gaaaaacaga cgctggcagg caggacggcg 1740
 ctgaaagggc ggttcggcat tgaagccggg tggaaaggcc atatgtccgc acgcacggga 1800
 tacgcaaaaa ggacggacgg cgacaaagaa gccgcattgt cgctcaaata gctgttttga 1860

<210> 2994
 <211> 619
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 2994
 Met Phe Arg Ala Gln Leu Gly Ser Asn Thr Arg Ser Thr Lys Ile Gly
 1 5 10 15

Asp Asp Ala Asp Phe Ser Phe Ser Asp Lys Pro Lys Pro Gly Thr Ser

20					25					30					
His	Tyr	Phe	Ser	Ser	Gly	Lys	Thr	Asp	Gln	Asn	Ser	Ser	Glu	Tyr	Gly
		35					40					45			
Tyr	Asp	Glu	Ile	Asn	Ile	Gln	Gly	Lys	Asn	Tyr	Asn	Ser	Gly	Ile	Leu
	50					55					60				
Ala	Val	Asp	Asn	Met	Pro	Val	Val	Lys	Lys	Tyr	Ile	Thr	Asp	Thr	Tyr
	65				70					75					80
Gly	Asp	Asn	Leu	Lys	Asp	Ala	Val	Lys	Lys	Gln	Leu	Gln	Asp	Leu	Tyr
				85					90					95	
Lys	Thr	Arg	Pro	Glu	Ala	Trp	Glu	Glu	Asn	Lys	Lys	Arg	Thr	Glu	Glu
			100					105					110		
Ala	Tyr	Ile	Glu	Gln	Leu	Gly	Pro	Lys	Phe	Ser	Ile	Leu	Lys	Gln	Lys
		115					120					125			
Asn	Pro	Asp	Leu	Ile	Asn	Lys	Leu	Val	Glu	Asp	Ser	Val	Leu	Thr	Pro
	130					135					140				
His	Ser	Asn	Thr	Ser	Gln	Thr	Ser	Leu	Asn	Asn	Ile	Phe	Asn	Lys	Lys
	145				150					155					160
Leu	His	Val	Lys	Ile	Glu	Asn	Lys	Ser	His	Val	Ala	Gly	Gln	Val	Leu
			165						170					175	
Glu	Leu	Thr	Lys	Met	Thr	Leu	Lys	Asp	Ser	Leu	Trp	Glu	Pro	Arg	Arg
			180					185					190		
His	Ser	Asp	Ile	His	Met	Leu	Glu	Thr	Ser	Asp	Asn	Ala	Arg	Ile	Arg
		195					200					205			
Leu	Asn	Thr	Lys	Asp	Glu	Lys	Leu	Thr	Val	His	Lys	Ala	Tyr	Gln	Gly
	210					215					220				
Gly	Ala	Asp	Phe	Leu	Phe	Gly	Tyr	Asp	Val	Arg	Glu	Ser	Asp	Lys	Pro
	225				230					235					240
Ala	Leu	Thr	Phe	Glu	Glu	Lys	Val	Ser	Gly	Gln	Ser	Gly	Val	Val	Leu
			245						250					255	
Glu	Arg	Arg	Pro	Glu	Asn	Leu	Lys	Thr	Leu	Asp	Gly	Arg	Lys	Leu	Ile
			260					265					270		
Ala	Ala	Glu	Lys	Ala	Asp	Ser	Asn	Ser	Phe	Ala	Phe	Lys	Gln	Asn	Tyr
		275					280					285			
Arg	Gln	Gly	Leu	Tyr	Glu	Leu	Leu	Leu	Lys	Gln	Cys	Glu	Gly	Gly	Phe
	290					295					300				
Cys	Leu	Gly	Val	Gln	Arg	Leu	Ala	Ile	Pro	Glu	Ala	Glu	Ala	Val	Leu
	305				310					315					320
Tyr	Ala	Gln	Gln	Ala	Tyr	Ala	Ala	Asn	Thr	Leu	Phe	Gly	Leu	Arg	Ala

325	330	335
Ala Asp Arg Gly Asp Asp Val Tyr	Ala Ala Asp Pro Ser Arg Gln Lys	
340	345	350
Leu Trp Leu Arg Phe Ile Gly Gly Arg Ser His Gln Asn Ile Arg Gly		
355	360	365
Gly Ala Ala Ala Asp Gly Arg Arg Lys Gly Val Gln Ile Gly Gly Glu		
370	375	380
Val Phe Val Arg Gln Asn Glu Gly Ser Arg Leu Ala Ile Gly Val Met		
385	390	395
Gly Gly Arg Ala Gly Gln His Ala Ser Val Asn Gly Lys Gly Gly Ala		
405	410	415
Ala Gly Ser Tyr Leu His Gly Tyr Gly Gly Gly Val Tyr Ala Ala Trp		
420	425	430
His Gln Leu Arg Asp Lys Gln Thr Gly Ala Tyr Leu Asp Gly Trp Leu		
435	440	445
Gln Tyr Gln Arg Phe Lys His Arg Ile Asn Asp Glu Asn Arg Ala Glu		
450	455	460
Arg Tyr Lys Thr Lys Gly Trp Thr Ala Ser Val Glu Gly Gly Tyr Asn		
465	470	475
Ala Leu Val Ala Glu Gly Val Val Gly Lys Gly Asn Asn Val Arg Phe		
485	490	495
Tyr Leu Gln Pro Gln Ala Gln Phe Thr Tyr Leu Gly Val Asn Gly Gly		
500	505	510
Phe Thr Asp Ser Glu Gly Thr Ala Val Gly Leu Leu Gly Ser Gly Gln		
515	520	525
Trp Gln Ser Arg Ala Gly Ile Arg Ala Lys Thr Arg Phe Ala Leu Arg		
530	535	540
Asn Gly Val Asn Leu Gln Pro Phe Ala Ala Phe Asn Val Leu His Arg		
545	550	555
Ser Lys Ser Phe Gly Val Glu Met Asp Gly Glu Lys Gln Thr Leu Ala		
565	570	575
Gly Arg Thr Ala Leu Glu Gly Arg Phe Gly Ile Glu Ala Gly Trp Lys		
580	585	590
Gly His Met Ser Ala Arg Ile Gly Tyr Gly Lys Arg Thr Asp Gly Asp		
595	600	605
Lys Glu Ala Ala Leu Ser Leu Lys Trp Leu Phe		
610	615	

<210> 2995
 <211> 702
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 2995
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 cccgtcgcgc tgtcgctttt gggcgcgttg ggttatacgg gatatgacag tgaggcgggtg 120
 cggacggcgg ttgccgtact cgacgtactc ggcaactgcag gggacgtggg ttctgacgcg 180
 cccgttcgcc gacgggcacg ggcgaaatcc ggccacagct acacaggcac ggtgtccaaa 240
 gtctatgacg gcgataccct tcacgtcacc gacggcgacg gcgcgaaaca taaaattcgg 300
 atggcggtata tcgacgcacc ggagatgaaa caggcttacg gtacacgttc gcgcgacaac 360
 ctgcgcgcgg cggcggaggg taggaaaagtc agtgtacgtg tgtttgaaac cgaccgctat 420
 cagcgcgaag tggcgcaggc atccgccggc aaaaccgatt tgaacctgat gcagggtgcag 480
 gacggggcgg cgtggcatta taaaagtatt gctaaagaac agcaggataa ggcggatttt 540
 gccgactatg ccgacgtcga aattcaggcg gaaagggaac gcaaaggatt gtggaaagct 600
 aaaaatccgc aagcgcctgt ggcgtaccgc cgggcaggca ggagcggcgg gggcaataag 660
 gatgggatgg attccgtggg cgaatggttg ggcatttggg aa 702

<210> 2996
 <211> 233
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 2996
 Met Phe Arg Arg His Arg His Leu Lys Asn Met Gln Ile Lys Lys Ile
 1 5 10 15
 Met Lys Trp Leu Pro Val Ala Leu Ser Leu Leu Gly Ala Leu Gly Tyr
 20 25 30
 Thr Gly Tyr Asp Ser Glu Ala Val Arg Thr Ala Val Ala Val Leu Asp
 35 40 45
 Val Leu Gly Thr Ala Gly Asp Val Gly Phe Asp Ala Pro Val Arg Arg
 50 55 60
 Arg Ala Ser Ala Lys Ser Gly His Ser Tyr Thr Gly Thr Val Ser Lys
 65 70 75 80
 Val Tyr Asp Gly Asp Thr Leu His Val Ile Asp Gly Asp Gly Ala Lys
 85 90 95
 His Lys Ile Arg Met Ala Tyr Ile Asp Ala Pro Glu Met Lys Gln Ala
 100 105 110
 Tyr Gly Thr Arg Ser Arg Asp Asn Leu Arg Ala Ala Ala Glu Gly Arg
 115 120 125
 Lys Val Ser Val Arg Val Phe Glu Thr Asp Arg Tyr Gln Arg Glu Val
 130 135 140
 Ala Gln Val Ser Ala Gly Lys Thr Asp Leu Asn Leu Met Gln Val Gln
 145 150 155 160
 Asp Gly Ala Ala Trp His Tyr Lys Ser Tyr Ala Lys Glu Gln Gln Asp

165								170					175				
Lys	Ala	Asp	Phe	Ala	Asp	Tyr	Ala	Asp	Ala	Gln	Ile	Gln	Ala	Glu	Arg		
			180					185					190				
Glu	Arg	Lys	Gly	Leu	Trp	Lys	Ala	Lys	Asn	Pro	Gln	Ala	Pro	Trp	Ala		
		195				200						205					
Tyr	Arg	Arg	Ala	Gly	Arg	Ser	Gly	Gly	Gly	Asn	Lys	Asp	Trp	Met	Asp		
		210				215						220					
Ser	Val	Gly	Glu	Trp	Leu	Gly	Ile	Trp									
225				230													

85					90					95					
His	Lys	Ile	Arg	Met	Ala	Tyr	Ile	Asp	Ala	Pro	Glu	Met	Lys	Gln	Ala
			100					105					110		
Tyr	Gly	Thr	Arg	Ser	Arg	Asp	Asn	Leu	Arg	Ala	Ala	Ala	Glu	Gly	Arg
		115					120						125		
Lys	Val	Ser	Val	Arg	Val	Phe	Asp	Thr	Asp	Arg	Tyr	Gln	Arg	Glu	Val
	130					135					140				
Ala	Gln	Val	Ser	Val	Gly	Lys	Thr	Asp	Leu	Asn	Leu	Met	Gln	Val	Gln
145						150					155				160
Asp	Gly	Ala	Ala	Trp	His	Tyr	Lys	Ser	Tyr	Ala	Lys	Glu	Gln	Gln	Asp
				165					170					175	
Lys	Ala	Asp	Phe	Ala	Asp	Tyr	Ala	Asp	Ala	Gln	Ile	Gln	Ala	Glu	Arg
			180					185					190		
Glu	Arg	Lys	Gly	Leu	Trp	Lys	Ala	Lys	Asn	Pro	Gln	Ala	Pro	Trp	Ala
		195					200					205			
Tyr	Arg	Arg	Ala	Gly	Arg	Ser	Gly	Gly	Gly	Asn	Lys	Asp	Trp	Met	Asp
	210					215					220				
Ala	Val	Gly	Glu	Trp	Leu	Gly	Ile	Trp							
225						230									

<210> 2999
 <211> 700
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 2999
 atgttcagac ggcacgcca tttgaaaaat atgcagatta aaaaaatcat gaaatggctt 60
 cccgtcgctt tgtcgctttt ggggtgcgttg ggttatacgg ggtacggcag cgaggcggtg 120
 cggacggcgg ttgccgtact cgacgtactc ggcgcggcag gggacgcggg ttccgacgcg 180
 cccgcccggc gccgagcatc ggcgaaatcc ggccaccgct acacaggcac ggtgtccaaa 240
 gtctatgacg gcgacaccct tcacgttata gacggcgacg gcgcgaaaca caaaatccgg 300
 atggcgata tcgacgcgcc ggagatgaaa caggcttacg gcacgcgttc gcgcgacaac 360
 ctgcgcgcgg cggcggaagg caggaaagtc agcgtccgcg tggtcgacac cgaccgctac 420
 cagcgcgaag tggcgaggt ttctgtcggc aaaaccgatt tgaacctgat gcaggtgcag 480
 gacggggcgg cgtggcatta taaaagttat gctaaagaac agcaggataa ggcggttttt 540
 gccgattatg ccgacgtca aattcaggcg gaaagggaac gcaaaggatt gtggaaagct 600
 aaaaaatccg aagcgccgtg ggcgtaccgc cgggcaggca ggagcggcgg gggcaataag 660
 gattgatgg atgccgtgg cgaatggttg ggcatttgg 700

<210> 3000
 <211> 233
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3000
 Met Phe Arg Arg His Arg His Leu Lys Asn Met Gln Ile Lys Lys Ile

1	5	10	15
Met Lys Trp	Leu Pro Val	Ala Leu Ser	Leu Leu Gly
20	25	30	
Thr Gly Tyr	Gly Ser Glu	Ala Val Arg	Thr Ala Val
35	40	45	
Val Leu Gly	Ala Ala Gly	Asp Ala Gly	Ser Asp Ala
50	55	60	
Arg Ala Ser	Ala Lys Ser	Gly His Arg	Tyr Thr Gly
65	70	75	
Val Tyr Asp	Gly Asp Thr	Leu His Val	Ile Asp Gly
85	90	95	
His Lys Ile	Arg Met Ala	Tyr Ile Asp	Ala Pro Glu
100	105	110	
Tyr Gly Thr	Arg Ser Arg	Asp Asn Leu	Arg Ala Ala
115	120	125	
Lys Val Ser	Val Arg Val	Phe Asp Thr	Asp Arg Tyr
130	135	140	
Ala Gln Val	Ser Val Gly	Lys Thr Asp	Leu Asn Leu
145	150	155	
Asp Gly Ala	Ala Trp His	Tyr Lys Ser	Tyr Ala Lys
165	170	175	
Lys Ala Asp	Phe Ala Asp	Tyr Ala Asp	Ala Gln Ile
180	185	190	
Glu Arg Lys	Gly Leu Trp	Lys Ala Lys	Asn Pro Gln
195	200	205	
Tyr Arg Arg	Ala Gly Arg	Ser Gly Gly	Gly Asn Lys
210	215	220	
Ala Val Gly	Glu Trp Leu	Gly Ile Trp	
225	230		

<210> 3001

<211> 747

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 3001

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ctgaaagtcg tattgggcag ttttcaaggc cttttggatc tgctgctcta ctttatccgc 60
aagcagaaca tcgatgttct cgatattccg atggtggaaa ttaccgggca gtatctgcac 120
tatattgccc aaatggaagc ctatcagttt gatttggcgg cggaatatct tttgatggcg 180
gcaatgctga ttgaaatcaa atcgcgcctg ctgctgccgc gtaccgaagc cgtcgaagac 240
gaagaggccg acccgcgtgc cgagttggtg cgccgtctgc ttgcctacga gcaaatgaaa 300

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ctggcggcgc agggtttggg cgcgctgccg cgtgcgggac gggatttcgc gtgggcttac 360
ctgccgctgg aaattgcagc cgagacgaag ctgcccggag tttacatcgc cgatttgatg 420
caggcatggt tgggcattct ttctcgggca aaacatacgc gcagccacga agtaatccaa 480
gaaacccttt ccgtgcgcgc gcaaattgacg gcaatcctgc gccgtttgaa cgaacacggg 540
atatgcaggt ttcacgcctt gttcaatccc gaacagggcg cggcttacgt gatcgtcaac 600
ttcatcgccc tgttgagct tgccaaagaa ggattggtcg gaatcgtaca ggaagacggg 660
ttcggagaaa tccgaatcag cctcaatcat gagggggcgc attcagacgg cattttcggc 720
acacggggcg ggcgcgatgt gttctaa 747

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<210> 3002

<211> 248

<212> PRT

<213> Neisseria gonorrhoeae

<400> 3002

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Leu Lys Val Val Leu Gly Ser Phe Gln Gly Pro Leu Asp Leu Leu Leu
  1                      5                      10                      15

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Tyr Leu Ile Arg Lys Gln Asn Ile Asp Val Leu Asp Ile Pro Met Val
      20                      25                      30

```

```

Glu Ile Thr Gly Gln Tyr Leu His Tyr Ile Ala Gln Met Glu Ala Tyr
      35                      40                      45

```

```

Gln Phe Asp Leu Ala Ala Glu Tyr Leu Leu Met Ala Ala Met Leu Ile
      50                      55                      60

```

```

Glu Ile Lys Ser Arg Leu Leu Leu Pro Arg Thr Glu Ala Val Glu Asp
      65                      70                      75                      80

```

```

Glu Glu Ala Asp Pro Arg Ala Glu Leu Val Arg Arg Leu Leu Ala Tyr
      85                      90                      95

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```

Glu Gln Met Lys Leu Ala Ala Gln Gly Leu Asp Ala Leu Pro Arg Ala
      100                      105                      110

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```

Gly Arg Asp Phe Ala Trp Ala Tyr Leu Pro Leu Glu Ile Ala Ala Glu
      115                      120                      125

```

```

Thr Lys Leu Pro Glu Val Tyr Ile Ala Asp Leu Met Gln Ala Trp Leu
      130                      135                      140

```

```

Gly Ile Leu Ser Arg Ala Lys His Thr Arg Ser His Glu Val Ile Gln
      145                      150                      155                      160

```

```

Glu Thr Leu Ser Val Arg Ala Gln Met Thr Ala Ile Leu Arg Arg Leu
      165                      170                      175

```

```

Asn Glu His Gly Ile Cys Arg Phe His Ala Leu Phe Asn Pro Glu Gln
      180                      185                      190

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Gly Ala Ala Tyr Val Ile Val Asn Phe Ile Ala Leu Leu Glu Leu Ala
      195                      200                      205

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Lys Glu Gly Leu Val Gly Ile Val Gln Glu Asp Gly Phe Gly Glu Ile

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210	215	220
Arg Ile Ser Leu Asn His Glu Gly Ala His Ser Asp Gly Ile Phe Gly		
225	230	235 240
Thr Arg Gly Gly Arg Asp Val Phe		
245		

<210> 3003
 <211> 747
 <212> DNA
 <213> Neisseria meningitidis

<400> 3003
 ttgaaagtcg tattgggcag cttccaaggc cctttggatc tactgctgta tctgatccgc 60
 aaacagaata tcgacgtact ggatattccg atggtgaaga ttaccgagca gtatctgcac 120
 tacatcgccc aaatagaaac ctatcagttt gatttggcgg cggaatatct tttgatggca 180
 gcaatgctga ttgaaatcaa atcgcgcctg ctgctgccgc gtaccgaaac cgtcgaagac 240
 gaagaagccg acccgcgctg cgagttggtg cgccgcctgc tggcttacga acagatgaag 300
 ctggcggcgc agggtttgga cgcgctgccc cgagccggac gggatttcgc gtgggcttac 360
 ctgcccgtgg aaattgccgt cgaagccaag ctgcccgaag tctatattac cgacttgacg 420
 caagcgtggc tgggtatttt gtctcgggca aaacacacgc gcagccacga agtaatcaaa 480
 gaaaccatct ccgtgcgcgc gcaaatgacg gcaatcctgc gccgtttgaa cggacacgga 540
 atatgcaggt ttcacgacct gttcaatccc aaacagggcg cggcttacgt ggtcgtcaac 600
 ttcacgcac tggtggagct tgccaaagaa ggattggtca gaatcgtgca ggaagacggt 660
 ttcggagaaa tccgaatcag cctcaatcat gagggggcgc attcagacgg catttccggc 720
 acacgaggcg ggcgcgatgt gttctaa 747

<210> 3004
 <211> 248
 <212> PRT
 <213> Neisseria meningitidis

<400> 3004
 Leu Lys Val Val Leu Gly Ser Phe Gln Gly Pro Leu Asp Leu Leu Leu
 1 5 10 15
 Tyr Leu Ile Arg Lys Gln Asn Ile Asp Val Leu Asp Ile Pro Met Val
 20 25 30
 Lys Ile Thr Glu Gln Tyr Leu His Tyr Ile Ala Gln Ile Glu Thr Tyr
 35 40 45
 Gln Phe Asp Leu Ala Ala Glu Tyr Leu Leu Met Ala Ala Met Leu Ile
 50 55 60
 Glu Ile Lys Ser Arg Leu Leu Leu Pro Arg Thr Glu Thr Val Glu Asp
 65 70 75 80
 Glu Glu Ala Asp Pro Arg Ala Glu Leu Val Arg Arg Leu Leu Ala Tyr
 85 90 95
 Glu Gln Met Lys Leu Ala Ala Gln Gly Leu Asp Ala Leu Pro Arg Ala
 100 105 110

Gly Arg Asp Phe Ala Trp Ala Tyr Leu Pro Leu Glu Ile Ala Val Glu
 115 120 125
 Ala Lys Leu Pro Glu Val Tyr Ile Thr Asp Leu Thr Gln Ala Trp Leu
 130 135 140
 Gly Ile Leu Ser Arg Ala Lys His Thr Arg Ser His Glu Val Ile Lys
 145 150 155 160
 Glu Thr Ile Ser Val Arg Ala Gln Met Thr Ala Ile Leu Arg Arg Leu
 165 170 175
 Asn Gly His Gly Ile Cys Arg Phe His Asp Leu Phe Asn Pro Lys Gln
 180 185 190
 Gly Ala Ala Tyr Val Val Val Asn Phe Ile Ala Leu Leu Glu Leu Ala
 195 200 205
 Lys Glu Gly Leu Val Arg Ile Val Gln Glu Asp Gly Phe Gly Glu Ile
 210 215 220
 Arg Ile Ser Leu Asn His Glu Gly Ala His Ser Asp Gly Ile Ser Gly
 225 230 235 240
 Thr Arg Gly Gly Arg Asp Val Phe
 245

<210> 3005
 <211> 747
 <212> DNA
 <213> Neisseria meningitidis

<400> 3005
 ctgaaagtcg tattgagcag ttttcaaggc cctttggatc tgctgctcta ccttatccgc 60
 aagcagaaca tcgatgttct cgatattccg atggtgaaga ttaccgaaca gtatctgcac 120
 tacatcgccc aaatagaaac ctatcagttt gatttggcgg cggaatatct tttgatggca 180
 gcaatgctga ttgaaatcaa atcgcgcctg ctgctgccgc gtaccgaaac cgtcgaagac 240
 gaagaagccg accgcgctgc cgagttggtg cgccgcctgc tggcttacga gcagatgaag 300
 ctggcggcac aagggttgga tgcgcttcct cgtgcgggcc gggatttcgc atgggcatac 360
 ctgccactgg aaattgccgt cgaagccaag ctgcccgaag tctatattac cgacttgacg 420
 caggcgctggc tgagtatttt gtctcgggca aaacatacgc gcagccacga agttatcaaa 480
 gaaaccatct ccgtgcgcgc gcaaatgacg gcaatcctgc gccgtttgaa caaacacggg 540
 atatgcaggt ttcacgacct gttcaatccc gaacagggcg cggttacgt ggtcgtcaac 600
 ttcacgcac tggttgagct tgccaaagaa ggtttggtcg gaatcgtaca ggaagtcggt 660
 ttcggagaaa tccgaatcag cctcaatcat gagggggcgc attcagacgg catttccggc 720
 acacggggcg ggcgcgatgt gttctaa 747

<210> 3006
 <211> 248
 <212> PRT
 <213> Neisseria meningitidis

<400> 3006
 Leu Lys Val Val Leu Ser Ser Phe Gln Gly Pro Leu Asp Leu Leu Leu
 1 5 10 15

Tyr Leu Ile Arg Lys Gln Asn Ile Asp Val Leu Asp Ile Pro Met Val
 20 25 30
 Lys Ile Thr Glu Gln Tyr Leu His Tyr Ile Ala Gln Ile Glu Thr Tyr
 35 40 45
 Gln Phe Asp Leu Ala Ala Glu Tyr Leu Leu Met Ala Ala Met Leu Ile
 50 55 60
 Glu Ile Lys Ser Arg Leu Leu Leu Pro Arg Thr Glu Thr Val Glu Asp
 65 70 75 80
 Glu Glu Ala Asp Pro Arg Ala Glu Leu Val Arg Arg Leu Leu Ala Tyr
 85 90 95
 Glu Gln Met Lys Leu Ala Ala Gln Gly Leu Asp Ala Leu Pro Arg Ala
 100 105 110
 Gly Arg Asp Phe Ala Trp Ala Tyr Leu Pro Leu Glu Ile Ala Val Glu
 115 120 125
 Ala Lys Leu Pro Glu Val Tyr Ile Thr Asp Leu Thr Gln Ala Trp Leu
 130 135 140
 Ser Ile Leu Ser Arg Ala Lys His Thr Arg Ser His Glu Val Ile Lys
 145 150 155 160
 Glu Thr Ile Ser Val Arg Ala Gln Met Thr Ala Ile Leu Arg Arg Leu
 165 170 175
 Asn Lys His Gly Ile Cys Arg Phe His Asp Leu Phe Asn Pro Glu Gln
 180 185 190
 Gly Ala Ala Tyr Val Val Val Asn Phe Ile Ala Leu Leu Glu Leu Ala
 195 200 205
 Lys Glu Gly Leu Val Gly Ile Val Gln Glu Val Gly Phe Gly Glu Ile
 210 215 220
 Arg Ile Ser Leu Asn His Glu Gly Ala His Ser Asp Gly Ile Ser Gly
 225 230 235 240
 Thr Arg Gly Gly Arg Asp Val Phe
 245

<210> 3007

<211> 624

<212> DNA

<213> Neisseria gonorrhoeae

<400> 3007

atgaacagaa gaaccttcct cctcgggcgca ggcgcggtgc ttcttaccgc ctgcggcaga 60
 aaatccgccc gaaccacgc caaaattccc gaaggaagca ccgtgcttgc cttgggcat 120
 tcgctcacct tcggctacgg agcaaacccc ggcgaaatcct acccgcgcga actgcaaaaa 180
 ctgacgggtt ggaatattgt caacggcggc gtatcgggcg atacgtccgc gcaagcccta 240


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tcgcgcctgc ccgcgctgtt ggcacgcaaa cccaagcttg tgattgtcgg cataggcggc 300
aacgactttc tgcgcaaagt tcccaggagg cagacccgcg ccaatatcgc gaaaatcatc 360
gaaaccgtgc aaaaggaaaa cattcccgcc gtcctcgtcg gcgtgccgca catcacactg 420
ggcgcgttgt tcgggcattt gagcgaccat ccgctgtatg aggatttgc cgaggaatac 480
ggcattccgt tgttcggcgg cgcgtgggcg gaaattttgg gcaataataa tctgaaatcc 540
gaccaaatac acgccaacgg caaaggctat cggaattcg ccgaaaattt gaatcaattt 600
ttgagaaaac atgggtttag ataa 624

```

<210> 3008
 <211> 200
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 3008
 Met Asn Arg Arg Thr Phe Leu Leu Gly Ala Gly Ala Leu Leu Leu Thr
 1 5 10 15
 Ala Cys Gly Arg Lys Ser Ala Arg Thr His Ala Lys Ile Pro Glu Gly
 20 25 30
 Ser Thr Val Leu Ala Leu Gly Asp Ser Leu Thr Phe Gly Tyr Gly Ala
 35 40 45
 Asn Pro Gly Glu Ser Tyr Pro Ala Gln Leu Gln Lys Leu Thr Gly Trp
 50 55 60
 Asn Ile Val Asn Gly Gly Val Ser Gly Asp Thr Ser Ala Gln Ala Leu
 65 70 75 80
 Ser Arg Leu Pro Ala Leu Leu Ala Arg Lys Pro Lys Leu Val Ile Val
 85 90 95
 Gly Ile Gly Gly Asn Asp Phe Leu Arg Lys Val Pro Glu Glu Gln Thr
 100 105 110
 Arg Ala Asn Ile Ala Lys Ile Ile Glu Thr Val Gln Lys Glu Asn Ile
 115 120 125
 Pro Ala Val Leu Val Gly Val Pro His Ile Thr Leu Gly Ala Leu Phe
 130 135 140
 Gly His Leu Ser Asp His Pro Leu Tyr Glu Asp Leu Ser Glu Glu Tyr
 145 150 155 160
 Gly Ile Pro Leu Phe Gly Gly Ala Trp Ala Glu Ile Leu Gly Asn Asn
 165 170 175
 Asn Leu Lys Ser Asp Gln Ile His Ala Asn Gly Lys Gly Tyr Arg Lys
 180 185 190
 Phe Ala Glu Asn Leu Asn Gln Phe
 195 200

<210> 3009
 <211> 624

<212> DNA

<213> *Neisseria meningitidis*

<400> 3009

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atgaacagaa gaaccttcct cctcgggcgca ggcgcgttgc tgcttaccgc ctgcggcaga 60
aaatccgccc gaacccacgc caaaattccc gaaggaagca ccgtacttgc cttggggcgat 120
tcgcttacct tcggctacgg cgcaaaccct ggcgaaacct accccgcgca actgcaaaaa 180
ctgacggggtt ggaatattgt caacggcggc gtatcgggcg atacatctgc ccaagccctg 240
tcgcgcctgc ccgcgctgtt ggcacgcaaa cccaagcttg tgattgtcgg cataggcggc 300
aacgactttc tgcgcaaagt tcccaaggag cagacccgcg ccaatatcgc gaaaatcatc 360
gaaaccgtgc agaaggaaaa catccccgcc gtctctgctg gcgtgccgca catcacactg 420
ggtgcgttgt tcgggcattt gagcgatcat ccgctgtatg aggatttgtc cgaggaatac 480
ggcattccgc tgttcggcgg cgctgggcg gaaattttgg gcgataataa tctgaaatcc 540
gaccaaatcc acgccaacgg caaaggctat cggaaatttg ccgaagattt gaatcaattt 600
ttgagaaaaac aggggtttag ataa 624
```

<210> 3010

<211> 207

<212> PRT

<213> *Neisseria meningitidis*

<400> 3010

```
Met Asn Arg Arg Thr Phe Leu Leu Gly Ala Gly Ala Leu Leu Leu Thr
  1                      5                      10                      15
```

```
Ala Cys Gly Arg Lys Ser Ala Arg Thr His Ala Lys Ile Pro Glu Gly
                20                      25                      30
```

```
Ser Thr Val Leu Ala Leu Gly Asp Ser Leu Thr Phe Gly Tyr Gly Ala
    35                      40                      45
```

```
Asn Pro Gly Glu Ser Tyr Pro Ala Gln Leu Gln Lys Leu Thr Gly Trp
    50                      55                      60
```

```
Asn Ile Val Asn Gly Gly Val Ser Gly Asp Thr Ser Ala Gln Ala Leu
    65                      70                      75                      80
```

```
Ser Arg Leu Pro Ala Leu Leu Ala Arg Lys Pro Lys Leu Val Ile Val
                85                      90                      95
```

```
Gly Ile Gly Gly Asn Asp Phe Leu Arg Lys Val Pro Lys Glu Gln Thr
    100                      105                      110
```

```
Arg Ala Asn Ile Ala Lys Ile Ile Glu Thr Val Gln Lys Glu Asn Ile
    115                      120                      125
```

```
Pro Ala Val Leu Val Gly Val Pro His Ile Thr Leu Gly Ala Leu Phe
    130                      135                      140
```

```
Gly His Leu Ser Asp His Pro Leu Tyr Glu Asp Leu Ser Glu Glu Tyr
    145                      150                      155                      160
```

```
Gly Ile Pro Leu Phe Gly Gly Ala Trp Ala Glu Ile Leu Gly Asp Asn
    165                      170                      175
```

```
Asn Leu Lys Ser Asp Gln Ile His Ala Asn Gly Lys Gly Tyr Arg Lys
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	180		185		190									
Phe	Ala	Glu	Asp	Leu	Asn	Gln	Phe	Leu	Arg	Lys	Gln	Gly	Phe	Arg
	195						200					205		

<210> 3011
 <211> 624
 <212> DNA
 <213> Neisseria meningitidis

<400> 3011
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 aaatccgccc gaacccacgc caaaattccc gaaggaagca ccgtacttgc cttgggcgat 120
 tcgcttacct tcgggtacgg cgcaaaccgc ggcgaaatcct accccgcgca actgcaaaaa 180
 ctgacggggtt ggaatattgt caacggcggc gtatcgggcg atacatccgc ccaagccctg 240
 tcgcgcctgc ccgcgcgtgtt ggcaagcgtt tgattgtcgg cataggcggc 300
 aacgactttc tgcgcaaagt tcccaaggag cagaccgcgc ccaatatcgc gaaaatcatc 360
 gaaaccgtgc agaaggaaaa catccccgcc gtctcgtcgc gcgtgccgca cattaccttg 420
 ggcgcggtgt tcgggcattt gagcgatcat ccgctgtatg aggatttgc cgaggaatac 480
 ggcatccgc tgttcggcgg cgcgtgggcg gaaattttgg gcgataataa tctgaaatcc 540
 gaccaaatcc acgccaacgg caaaggctat cggaatttgc ccgaagattt gaatcaattt 600
 ttgagaaaac aggggttttag ataa 624

<210> 3012
 <211> 207
 <212> PRT
 <213> Neisseria meningitidis

<400> 3012
 Met Asn Arg Arg Thr Phe Leu Leu Gly Ala Gly Ala Leu Leu Leu Thr
 1 5 10 15
 Ala Cys Gly Arg Lys Ser Ala Arg Thr His Ala Lys Ile Pro Glu Gly
 20 25 30
 Ser Thr Val Leu Ala Leu Gly Asp Ser Leu Thr Phe Gly Tyr Gly Ala
 35 40 45
 Asn Pro Gly Glu Ser Tyr Pro Ala Gln Leu Gln Lys Leu Thr Gly Trp
 50 55 60
 Asn Ile Val Asn Gly Gly Val Ser Gly Asp Thr Ser Ala Gln Ala Leu
 65 70 75 80
 Ser Arg Leu Pro Ala Leu Leu Ala Arg Lys Pro Lys Leu Val Ile Val
 85 90 95
 Gly Ile Gly Gly Asn Asp Phe Leu Arg Lys Val Pro Lys Glu Gln Thr
 100 105 110
 Arg Ala Asn Ile Ala Lys Ile Ile Glu Thr Val Gln Lys Glu Asn Ile
 115 120 125
 Pro Ala Val Leu Val Gly Val Pro His Ile Thr Leu Gly Ala Leu Phe

130 135 140
 Gly His Leu Ser Asp His Pro Leu Tyr Glu Asp Leu Ser Glu Glu Tyr
 145 150 155 160
 Gly Ile Pro Leu Phe Gly Gly Ala Trp Ala Glu Ile Leu Gly Asp Asn
 165 170 175
 Asn Leu Lys Ser Asp Gln Ile His Ala Asn Gly Lys Gly Tyr Arg Lys
 180 185 190
 Phe Ala Glu Asp Leu Asn Gln Phe Leu Arg Lys Gln Gly Phe Arg
 195 200 205

<210> 3013
 <211> 1053
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 3013
 atgatgaaca cgccgcatcc ggcgccgaaa atcgccgtca tcggcgccagg ctgggcccggc 60
 ttgtccgccg ccgtcacctt ggccgcccac gccgacgtta ccctgtttga agccggccgg 120
 caggcgggcg gaagggcgcg cacactggcc ggaaataccg acggtttcgg ttttttggac 180
 aacgggcagc acattttgct cggcgcatat cggggcgtgt tgcgcctgat gaaaaccatc 240
 gggttcagacc cccgtgccgc ctttttgccg gtaccgctgc actggcatat gcacggccgg 300
 ttgcagttcc gcgcctccc cctgcccgcg ccgctgcata ttttgggccc cgtgctgctt 360
 gcccggcgcg taccgtccgc attcaaagcc aaactgcttg ccgatatgtc cgatttgcag 420
 aagtcgcac gccctcgaca gcccgacacg acagttgcac aatggctgaa acagcggaa 480
 gtgcgcgctg ccgcgtaat gcagtttttg cagcccttgg tctggggcgc gctcaacacg 540
 cctttggaaa ccgcaagcct gcgcgtgttg tgcaacgttt tgtecgacgg cgtgctgacg 600
 aaaaaatccg gcagcgacta tctcctaccc aaacaggatt tgggcgcaat cgtcgccgaa 660
 cccgccttgg cggagcttca acggtccggc gcggacatcc gcctcgaaac gcgcgtatgc 720
 cgtctgaaca ccctcccggg cggaaaagtc ctgctcaacg gcgaagcctt cgatgccgcc 780
 atacttgcca ccgcgcccta ccacgcgcc gcgctcctgc ccgaaggcac gcccgaaac 840
 gttcagacgg catatcaaaa ccttcgctac cagccatca ccaccgtcta tctgcgtac 900
 gccgaaccgg tccgcctgcc cgcgccgtg accggcattg ccgacggcac ggcacaatgg 960
 ctgctttgcc cggggcaggc tccggactgc ccccaaaaac aagtctccgc cgtcattagg 1020
 gtttccgacc gcgtcggcgc gtttgcaaac cga 1053

<210> 3014
 <211> 351
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 3014
 Met Met Asn Thr Pro His Pro Arg Pro Lys Ile Ala Val Ile Gly Ala
 1 5 10 15
 Gly Trp Ala Gly Leu Ser Ala Ala Val Thr Leu Ala Arg His Ala Asp
 20 25 30
 Val Thr Leu Phe Glu Ala Gly Arg Gln Ala Gly Gly Arg Ala Arg Thr
 35 40 45
 Leu Ala Gly Asn Thr Asp Gly Phe Gly Phe Leu Asp Asn Gly Gln His

50 55 60
 Ile Leu Leu Gly Ala Tyr Arg Gly Val Leu Arg Leu Met Lys Thr Ile
 65 70 75 80
 Gly Ser Asp Pro Arg Ala Ala Phe Leu Arg Val Pro Leu His Trp His
 85 90 95
 Met His Gly Gly Leu Gln Phe Arg Ala Leu Pro Leu Pro Ala Pro Leu
 100 105 110
 His Ile Leu Gly Gly Val Leu Leu Ala Arg Arg Val Pro Ser Ala Phe
 115 120 125
 Lys Ala Lys Leu Leu Ala Asp Met Ser Asp Leu Gln Lys Ser Ala Arg
 130 135 140
 Leu Gly Gln Pro Asp Thr Thr Val Ala Gln Trp Leu Lys Gln Arg Asn
 145 150 155 160
 Val Pro Arg Ala Ala Val Met Gln Phe Trp Gln Pro Leu Val Trp Gly
 165 170 175
 Ala Leu Asn Thr Pro Leu Glu Thr Ala Ser Leu Arg Val Leu Cys Asn
 180 185 190
 Val Leu Ser Asp Gly Val Leu Thr Lys Lys Ser Gly Ser Asp Tyr Leu
 195 200 205
 Leu Pro Lys Gln Asp Leu Gly Ala Ile Val Ala Glu Pro Ala Leu Ala
 210 215 220
 Glu Leu Gln Arg Leu Gly Ala Asp Ile Arg Leu Glu Thr Arg Val Cys
 225 230 235 240
 Arg Leu Asn Thr Leu Pro Asp Gly Lys Val Leu Val Asn Gly Glu Ala
 245 250 255
 Phe Asp Ala Ala Ile Leu Ala Thr Ala Pro Tyr His Ala Ala Ala Leu
 260 265 270
 Leu Pro Glu Gly Thr Pro Glu His Val Gln Thr Ala Tyr Gln Asn Leu
 275 280 285
 Arg Tyr His Ala Ile Thr Thr Val Tyr Leu Arg Tyr Ala Glu Pro Val
 290 295 300
 Arg Leu Pro Ala Pro Leu Thr Gly Ile Ala Asp Gly Thr Ala Gln Trp
 305 310 315 320
 Leu Leu Cys Pro Gly Gln Ala Pro Asp Cys Pro Gln Asn Glu Val Ser
 325 330 335
 Ala Val Ile Ser Val Ser Asp Arg Val Gly Ala Phe Ala Asn Arg
 340 345 350

<210> 3015
 <211> 1314
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3015
 atgatgaaca cgccgcatcc ggcgccgaaa atcgccgtca tcggcgagcag ctgggcagga 60
 ctgtccgccg ccgtcacctt ggcgcgccac gccgacgtta ccctgtttga agccggccgg 120
 caggcgggag cgaggcgcg cacactggcc ggaaataccg acggtttcgg ttttttggac 180
 aacgggcagc acattttgct cggcgcatac cggggcgtgt tgcgcctgat gaaaaccatc 240
 ggttcggatc ccgtgcccgc ctttttgccg gtaccgctgc actggcatat gcacggcggg 300
 ttgcagttcc gcgccctccc cctgcccgcg ccgtgcata ttttgggcgg cgtgctgctt 360
 gcccggcgtg caccgactgc attcaaagcc aaactgcttg ccgatatgtc cgatttgcag 420
 aagtccgcac gcctcggaca gcccgacacg acagtggcgc aatggctgaa acagcggaac 480
 gtgccgcgtg ccgccgtgat gcagtttttg cagcccttgg tttggggcgc gctcaacacg 540
 cctttggaaa ccgcaagcct gcgcgtgttg tgcaacgttt tgtccgacgg cgtgctgacg 600
 aaaaaatccg gcagcgacta tctcctaccc aagcaggatt tgggcgcaat cgtcgcgaa 660
 cccgccttgg cggatcttca acggctcggc gcggacatcc gcctcgaaac gcgcgtatgc 720
 cgtctgaaca cctccccgga cgggaaagtg ctctcaacg gcgaagcttt cgatgccgcc 780
 gtccccgcca ccgcgcctta ccacgcgcgc gcgtcctgc ccgaaggcac gcccgaaacac 840
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 gccgaaccgg tccgcctgcc cgcgccgctg accggccttg ccgacggcac ggtgcaatgg 960
 ctgctttgcc ggggcaggct cggactgcct gaaaacgaag tgtccgccgt catcagcgtt 1020
 tccgaccgag tcggcgcggt tgcaaacggg gcgtgggcgg acaaagccca cgccgacctc 1080
 aaacgcatcc ttccgcattt gggcgaaccc gaagccgtgc gcgtcatcac cgaaaaacgc 1140
 gccacaaccg cagccgatgc ccgcgcgcg gacttgtcgt gggtgcaccg gcaccgcac 1200
 ttccccgcg gcgactacct ccaccgggac taccgcgcca cgctcgaagc cgccgtacaa 1260
 tcaggtttcg cgtcggcgga agcctgcctg caaagcctga gcgatgccgt ctga 1314

<210> 3016
 <211> 437
 <212> PRT

<213> *Neisseria meningitidis*

<400> 3016
 Met Met Asn Thr Pro His Pro Arg Pro Lys Ile Ala Val Ile Gly Ala
 1 5 10 15
 Gly Trp Ala Gly Leu Ser Ala Ala Val Thr Leu Ala Arg His Ala Asp
 20 25 30
 Val Thr Leu Phe Glu Ala Gly Arg Gln Ala Gly Gly Arg Ala Arg Thr
 35 40 45
 Leu Ala Gly Asn Thr Asp Gly Phe Gly Phe Leu Asp Asn Gly Gln His
 50 55 60
 Ile Leu Leu Gly Ala Tyr Arg Gly Val Leu Arg Leu Met Lys Thr Ile
 65 70 75 80
 Gly Ser Asp Pro Arg Ala Ala Phe Leu Arg Val Pro Leu His Trp His
 85 90 95
 Met His Gly Gly Leu Gln Phe Arg Ala Leu Pro Leu Pro Ala Pro Leu

100	105	110
His Ile Leu Gly Gly Val Leu Leu Ala Arg Arg Ala Pro Thr Ala Phe 115 120 125		
Lys Ala Lys Leu Leu Ala Asp Met Ser Asp Leu Gln Lys Ser Ala Arg 130 135 140		
Leu Gly Gln Pro Asp Thr Thr Val Ala Gln Trp Leu Lys Gln Arg Asn 145 150 155 160		
Val Pro Arg Ala Ala Val Met Gln Phe Trp Gln Pro Leu Val Trp Gly 165 170 175		
Ala Leu Asn Thr Pro Leu Glu Thr Ala Ser Leu Arg Val Leu Cys Asn 180 185 190		
Val Leu Ser Asp Gly Val Leu Thr Lys Lys Ser Gly Ser Asp Tyr Leu 195 200 205		
Leu Pro Lys Gln Asp Leu Gly Ala Ile Val Ala Glu Pro Ala Leu Ala 210 215 220		
Asp Leu Gln Arg Leu Gly Ala Asp Ile Arg Leu Glu Thr Arg Val Cys 225 230 235 240		
Arg Leu Asn Thr Leu Pro Asp Gly Lys Val Leu Val Asn Gly Glu Ala 245 250 255		
Phe Asp Ala Ala Val Pro Ala Thr Ala Pro Tyr His Ala Ala Ala Leu 260 265 270		
Leu Pro Glu Gly Thr Pro Glu His Val Gln Thr Ala Tyr Gln Asn Leu 275 280 285		
Arg Tyr His Ala Ile Thr Thr Val Tyr Leu Arg Tyr Ala Glu Pro Val 290 295 300		
Arg Leu Pro Ala Pro Leu Thr Gly Leu Ala Asp Gly Thr Val Gln Trp 305 310 315 320		
Leu Leu Cys Arg Gly Arg Leu Gly Leu Pro Glu Asn Glu Val Ser Ala 325 330 335		
Val Ile Ser Val Ser Asp Arg Val Gly Ala Phe Ala Asn Arg Ala Trp 340 345 350		
Ala Asp Lys Ala His Ala Asp Leu Lys Arg Ile Leu Pro His Leu Gly 355 360 365		
Glu Pro Glu Ala Val Arg Val Ile Thr Glu Lys Arg Ala Thr Thr Ala 370 375 380		
Ala Asp Ala Pro Pro Pro Asp Leu Ser Trp Leu His Arg His Arg Ile 385 390 395 400		
Phe Pro Ala Gly Asp Tyr Leu His Pro Asp Tyr Pro Ala Thr Leu Glu		

405

410

415

Ala Ala Val Gln Ser Gly Phe Ala Ser Ala Glu Ala Cys Leu Gln Ser
 420 425 430

Leu Ser Asp Ala Val
 435

<210> 3017

<211> 1314

<212> DNA

<213> Neisseria meningitidis

<400> 3017

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atgatgaaca cgccgcaccc ggcggcgaaa atcgccgtca tcggcgccagg ctggggccggc 60
ttgtccgcgc cgttacctt ggccgcggcac gccgacgtta ccctgtttga agccggccggc 120
caggcggggcg gcagggcgcg cgcactggcc ggaaataccg acggtttcgg ttttttggac 180
aacgggcagc atattttact cggcgccatac cggggcggtg tgccgcctgat gaaaaccatc 240
ggttcagacc cccatgccgc ctttttgccg actggcatat gcacggcggt 300
ttgcagttcc ggcgcctccc cctgcccgcg cccctgcata ttttggcgcg cgtgctgctt 360
gcccgggcgcg taccgtccgc attcaaagcc aaactgcttg ccgatatgtc cgatttgcag 420
aagtccgcac gctcggaca gcccgacacg acagtggcgc aatggctgaa acagcggaac 480
gtgccgcgtg ccgcgtaat gcagtttttg cagcccttg tttggggcg gctcaacacg 540
cctttggaaa ccgcaagcct gcgcgtgttg tgcaacggtt tgtccgacgg cgtgctgacg 600
aaaaaatccg gcagcgacta tctcctaccc aaacaggatt tgggcgcaat cgtcgccgaa 660
cccgccttgg cggagcttca acggctcggc gcggacatcc gcctcgaaac gcgcatatgc 720
cgtctgaaca cctcccga cgggaaagtg ctcgtcaacg gcgaacctt cgatgccgcc 780
gtccccgcca ccgcgcccta ccacgccgc gccgtcctgc ccgaaggcac gcccgaaac 840
gttcagacgg catatcaaaa ccttcgctat cagccatca ccaccgtcta tctgcgtat 900
gcgaacccg tccgcttgc tgccccgtg accggacttg ccgacggcac ggtgcaatgg 960
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aaacgcaccc ttccgcattt gggcgaaccc gaagccgtgc gcgtcatcac cgaaaaacgc 1140
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ttccccgccg gcgactacct ccaccagac taccgcgcca cgctcgaagc cgccgtacaa 1260
tcaggtttcg cgtcgcgga agcctgcctg caaagcctga gcgatgccgt ctga 1314

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<210> 3018

<211> 437

<212> PRT

<213> Neisseria meningitidis

<400> 3018

Met Met Asn Thr Pro His Pro Arg Pro Lys Ile Ala Val Ile Gly Ala
 1 5 10 15

Gly Trp Ala Gly Leu Ser Ala Ala Val Thr Leu Ala Arg His Ala Asp
 20 25 30

Val Thr Leu Phe Glu Ala Gly Arg Gln Ala Gly Gly Arg Ala Arg Ala
 35 40 45

Leu Ala Gly Asn Thr Asp Gly Phe Gly Phe Leu Asp Asn Gly Gln His
 50 55 60

Ile	Leu	Leu	Gly	Ala	Tyr	Arg	Gly	Val	Leu	Arg	Leu	Met	Lys	Thr	Ile	65	70	75	80
Gly	Ser	Asp	Pro	His	Ala	Ala	Phe	Leu	Arg	Val	Pro	Leu	His	Trp	His	85	90	95	
Met	His	Gly	Gly	Leu	Gln	Phe	Arg	Ala	Leu	Pro	Leu	Pro	Ala	Pro	Leu	100	105	110	
His	Ile	Leu	Gly	Gly	Val	Leu	Leu	Ala	Arg	Arg	Val	Pro	Ser	Ala	Phe	115	120	125	
Lys	Ala	Lys	Leu	Leu	Ala	Asp	Met	Ser	Asp	Leu	Gln	Lys	Ser	Ala	Arg	130	135	140	
Leu	Gly	Gln	Pro	Asp	Thr	Thr	Val	Ala	Gln	Trp	Leu	Lys	Gln	Arg	Asn	145	150	155	160
Val	Pro	Arg	Ala	Ala	Val	Met	Gln	Phe	Trp	Gln	Pro	Leu	Val	Trp	Gly	165	170	175	
Ala	Leu	Asn	Thr	Pro	Leu	Glu	Thr	Ala	Ser	Leu	Arg	Val	Leu	Cys	Asn	180	185	190	
Val	Leu	Ser	Asp	Gly	Val	Leu	Thr	Lys	Lys	Ser	Gly	Ser	Asp	Tyr	Leu	195	200	205	
Leu	Pro	Lys	Gln	Asp	Leu	Gly	Ala	Ile	Val	Ala	Glu	Pro	Ala	Leu	Ala	210	215	220	
Glu	Leu	Gln	Arg	Leu	Gly	Ala	Asp	Ile	Arg	Leu	Glu	Thr	Arg	Ile	Cys	225	230	235	240
Arg	Leu	Asn	Thr	Leu	Pro	Asp	Gly	Lys	Val	Leu	Val	Asn	Gly	Glu	Pro	245	250	255	
Phe	Asp	Ala	Ala	Val	Pro	Ala	Thr	Ala	Pro	Tyr	His	Ala	Ala	Ala	Leu	260	265	270	
Leu	Pro	Glu	Gly	Thr	Pro	Glu	His	Val	Gln	Thr	Ala	Tyr	Gln	Asn	Leu	275	280	285	
Arg	Tyr	His	Ala	Ile	Thr	Thr	Val	Tyr	Leu	Arg	Tyr	Ala	Glu	Pro	Val	290	295	300	
Arg	Leu	Pro	Ala	Pro	Leu	Thr	Gly	Leu	Ala	Asp	Gly	Thr	Val	Gln	Trp	305	310	315	320
Leu	Leu	Cys	Arg	Gly	Arg	Leu	Gly	Leu	Pro	Glu	Asn	Glu	Val	Ser	Ala	325	330	335	
Val	Ile	Ser	Val	Ser	Asp	Arg	Val	Gly	Ala	Phe	Ala	Asn	Arg	Ala	Trp	340	345	350	
Ala	Asp	Lys	Val	His	Ala	Asp	Leu	Lys	Arg	Ile	Leu	Pro	His	Leu	Gly	355	360	365	

Glu Pro Glu Ala Val Arg Val Ile Thr Glu Lys Arg Ala Thr Thr Ala
370 375 380

Ala Asp Ala Pro Pro Pro Asp Leu Ser Trp Leu His Arg His Arg Ile
385 390 395 400

Phe Pro Ala Gly Asp Tyr Leu His Pro Asp Tyr Pro Ala Thr Leu Glu
405 410 415

Ala Ala Val Gln Ser Gly Phe Ala Ser Ala Glu Ala Cys Leu Gln Ser
420 425 430

Leu Ser Asp Ala Val
435

<210> 3019

<211> 603

<212> DNA

<213> Neisseria meningitidis

<400> 3019

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atgaatatga aaaaattgat ttccgcaatt tgtgtttcaa ttgttttattc agcctgcaac 60
caacaatcaa aaacggcaca agccgaagaa cctgtccaaa gtatccaggc tgctgattgt 120
accgccccaa tggacatcac agttgaacaa tatctcatca atttgagca agcattttaaa 180
actcagaacg tctcaacaaa aatccataat aaaaatattg tcaagaccga ttgtgggttat 240
gaccttactt tggtaatgga ttttggggcg attgcgctca aactggacga gcagcaaaaa 300
attagagcta tctcagtagg ctacatttta aaaaccgacg gagagaaaagg acaaaatcta 360
gtcaataatg ccataaatgg attacacagt attcaggcag ttctgtcttt aactaccaca 420
gacaaaattg gcgaatcgga agcaggaaaa caacttttta cagctttaac cgaagtcgtc 480
aaagaatcca atcagacagg agcaacagcg caaaaagacg ttccggcgaga tggatatttta 540
tatagcgttg tttttgaaaa agaaacaaac accattgcaa taatcggcag aaaacaaccc 600
taa 603
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<210> 3020

<211> 200

<212> PRT

<213> Neisseria meningitidis

<400> 3020

Met Asn Met Lys Lys Leu Ile Ser Ala Ile Cys Val Ser Ile Val Leu
1 5 10 15

Ser Ala Cys Asn Gln Gln Ser Lys Thr Ala Gln Ala Glu Glu Pro Val
20 25 30

Gln Ser Ile Gln Ala Ala Asp Cys Thr Ala Pro Met Asp Ile Thr Val
35 40 45

Glu Gln Tyr Leu Ile Asn Leu Glu Gln Ala Phe Lys Thr Gln Asn Val
50 55 60

Ser Thr Lys Ile His Asn Lys Asn Ile Val Lys Thr Asp Cys Gly Tyr
65 70 75 80

Asp Leu Thr Leu Val Met Asp Phe Gly Ala Ile Ala Leu Lys Leu Asp

	85		90		95
Glu Gln Gln Lys Ile Arg Ala Ile Ser Val Gly Tyr Ile Leu Lys Thr					
	100		105		110
Asp Gly Glu Lys Gly Gln Asn Leu Val Asn Asn Ala Ile Asn Gly Leu					
	115		120		125
His Ser Ile Gln Ala Val Leu Ser Leu Thr Thr Thr Asp Lys Leu Gly					
	130		135		140
Glu Ser Glu Ala Gly Lys Gln Leu Phe Thr Ala Leu Thr Glu Val Val					
145	150		155		160
Lys Glu Ser Asn Gln Thr Gly Ala Thr Ala Gln Lys Asp Val Pro Ala					
	165		170		175
Asp Gly Ile Leu Tyr Ser Val Val Phe Glu Lys Glu Thr Asn Thr Ile					
	180		185		190
Ala Ile Ile Gly Arg Lys Gln Pro					
	195		200		

<210> 3021
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primers

<400> 3021
 cgcggatccc atatgttgcc tgcaatcacg att

33

<210> 3022
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primers

<400> 3022									
Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Thr Thr Thr Ala Gly Ala									
1		5		10				15	
Ala Gly Cys Gly Gly Gly Cys Gly Gly Cys Ala Ala									
	20			25					

<210> 3023
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3023
cgcggatccc atatgttcaa atcctttgtc gtca 34

<210> 3024
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3024
Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Thr Thr Thr Gly Gly Cys
1 5 10 15
Gly Gly Thr Thr Thr Thr Gly Cys Thr Gly Cys
20 25

<210> 3025
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3025
cgcggatccc atatggccgc ccccgcatct 30

<210> 3026
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3026
Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Ala Thr Thr Thr Ala Cys
1 5 10 15
Thr Thr Thr Thr Thr Thr Gly Ala Thr Gly Thr Cys Gly Ala Cys
20 25 30

<210> 3027
<211> 33
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primers

<400> 3027

cgcggatccc atatgtgccca aagcaagagc atc

33

<210> 3028

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primers

<400> 3028

Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Cys Gly Gly Gly Cys Gly
1 5 10 15

Gly Thr Ala Thr Thr Cys Gly Gly Gly
20 25

<210> 3029

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primers

<400> 3029

cgcggatccc atatggaaac acagctttac at

32

<210> 3030

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primers

<400> 3030

Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Ala Thr Ala Ala Thr Ala
1 5 10 15

Ala Thr Ala Thr Cys Cys Cys Gly Cys Gly Cys Cys Cys
20 25

<210> 3031

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primers

<400> 3031
cgcggatccc atatgactga caacgcact

29

<210> 3032
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3032
Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Gly Ala Cys Cys Gly Cys
1 5 10 15
Gly Thr Thr Gly Thr Cys Gly Ala Ala Ala
20 25

<210> 3033
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3033
cgcggatccc atatgaaaca ccgccaaccg a

31

<210> 3034
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3034
Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Thr Thr Cys Thr Gly Thr
1 5 10 15
Ala Ala Ala Ala Ala Ala Ala Gly Thr Ala Thr Gly Thr Gly Cys
20 25 30

<210> 3035
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3035
ccggaattct agctagcctt tcagcctgcg gg 32

<210> 3036
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3036
Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Ala Thr Cys Cys Thr Gly
1 5 10 15
Cys Thr Cys Thr Thr Thr Thr Thr Gly Cys Cys
20 25

<210> 3037
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3037
cgcgatccc atatgtgcgg gacactgaca g 31

<210> 3038
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primers

<400> 3038
Cys Cys Cys Gly Cys Thr Cys Gly Ala Gly Ala Gly Gly Thr Thr Gly
1 5 10 15
Thr Cys Cys Thr Thr Gly Thr Cys Thr Ala Thr Gly
20 25

<210> 3039
<211> 459
<212> DNA
<213> Neisseria meningitidis

<400> 3039
ataacgcgga ttgcggctg cttgatttca acggttttca gggcttcggc aagtttgtcg 60

gcggcggg c c ggc gc ggg gg cgg c cgggc gcgg c gggcgcg
ggc ccgg c c ggc ggc gcc g gcgcg ccg cggcggcggc g gcc gc
c cg g ccggg g g g g g cggc cg cc c cgc gggcggc
cggc c ggc c c gc c c cc gccg g cggcgc c gcgcc
cgcc gcg g cggcgg c gc c g cggcgcgc ggcgc cg g g ccgcg
cggc c gcgcc ggcggc cg g gcgg g cggcg g gc g g ccg
gc cggcgg c ggcg gccgccgc c g

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g g g

g

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g cgcgg gcggc g c g c cgg g g g cggc g g cg
gcggcggg c c ggc gc ggg gg cgg cgggc gcgg c gggcgcg
ggc ccgg c c ggc ggc gcc g g gcg ccg cggcggcggc g gcc gc
c cg c g ccgggcg g g g g cggc cg cc c cgcc c g gcgg
cggc c c gcc g c c g c c cc ccc ggccgc c gcgcc

acgccttgcg gtacggcgga ctgcatcagt tcggcgcgca ggcggacgag tttgacggca 360
 tcggcaaaat ccaatgcttc ggcgcgaca agcgcggtgt attcgccgag gctgtgtccg 420
 gcaacggcgg caggcgtttt gccgccact tccaaatag 459

<210> 3042
 <211> 152
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3042
 Met Thr Arg Ile Cys Gly Cys Leu Ile Ser Thr Val Leu Ser Val Ser
 1 5 10 15
 Ala Ser Leu Ser Ala Ala Gly Phe Ile Arg Leu Gln Trp Glu Gly Thr
 20 25 30
 Asp Thr Gly Ser Gly Arg Ala Arg Leu Ala Pro Ala Ser Leu Ala Ala
 35 40 45
 Ala Met Val Arg Pro Thr Ala Ala Ala Leu Pro Ala Ile Thr Thr Cys
 50 55 60
 Pro Gly Glu Leu Lys Leu Thr Ala Ser Thr Thr Ser Pro Cys Ala Asp
 65 70 75 80
 Ser Ala Gln Ile Cys Leu Thr Cys Ser Ser Ser Lys Pro Lys Met Ala
 85 90 95
 Ala Ile Ala Pro Thr Pro Cys Gly Thr Ala Asp Cys Ile Ser Ser Ala
 100 105 110
 Arg Arg Arg Thr Ser Leu Thr Ala Ser Ala Lys Ser Asn Ala Ser Ala
 115 120 125
 Ala Thr Ser Ala Val Tyr Ser Pro Arg Leu Cys Pro Ala Thr Ala Ala
 130 135 140
 Gly Val Leu Pro Pro Thr Ser Lys
 145 150

<210> 3043
 <211> 459
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3043
 atgaacnnga tttgcggctg ctgatttca acggttttna gggcttcggc gagtttgctg 60
 gcggcggtt tcatgaggct gcaatgggaa ggtacngaca cnggcagcgg cagggcgcgt 120
 ttggcgccgg ctcttttggc ggcaagcata gcgcgctcga cggcgcgccg attgcctgca 180
 atcacgactt gtccgggcca gttgaagttg acggcttcaa ccacttcac ctgtgcggat 240
 tcggcgcaaa tttgttttac ctgttcac tccaagccga gaatcgccgc cattgcgccc 300
 acgccttgcg gtacggcgga ctgcatcagt tcggcgcgca ngcgcacgag tttgaccgcg 360
 tcggcaaaat ccaatgcgcc ggcggaacn agtgcggtgt attcgccgan gctgtgtccg 420
 gcaacggcgg caggcgtttt gccgccgct tccgaatag 459

<210> 3044
 <211> 152
 <212> PRT
 <213> Neisseria meningitidis

<400> 3044
 Met Thr Xaa Ile Cys Gly Cys Leu Ile Ser Thr Val Xaa Arg Ala Ser
 1 5 10 15
 Ala Ser Leu Ser Ala Ala Gly Phe Met Arg Leu Gln Trp Glu Gly Thr
 20 25 30
 Asp Thr Gly Ser Gly Arg Ala Arg Leu Ala Pro Ala Ser Leu Ala Ala
 35 40 45
 Ser Ile Ala Arg Ser Thr Ala Ala Ala Leu Pro Ala Ile Thr Thr Cys
 50 55 60
 Pro Gly Glu Leu Lys Leu Thr Ala Ser Thr Thr Ser Ser Cys Ala Asp
 65 70 75 80
 Ser Ala Gln Ile Cys Phe Thr Cys Ser Ser Ser Lys Pro Arg Ile Ala
 85 90 95
 Ala Ile Ala Pro Thr Pro Cys Gly Thr Ala Asp Cys Ile Ser Ser Ala
 100 105 110
 Arg Xaa Arg Thr Ser Leu Thr Ala Ser Ala Lys Ser Asn Ala Pro Ala
 115 120 125
 Ala Thr Ser Ala Val Tyr Ser Pro Xaa Leu Cys Pro Ala Thr Ala Ala
 130 135 140
 Gly Val Leu Pro Pro Ala Ser Glu
 145 150

<210> 3045
 <211> 600
 <212> DNA
 <213> Neisseria meningitidis

<400> 3045
 tccggttatcg ggcgtatgga gttggacaaa acgtttgaag aacgcgacga aatcaacagt 60
 actgttggtg cggctttgga cgaggcggcc ggggcttggg gtgtgaaggt tttgcgttat 120
 gagattaaag acttggttcc gccgcaagaa atccttcgct caatgcaggc gcaaattact 180
 gccgaacgcg aaaaacgcgc ccgtatcgcc gaatccgaag gtcgtaaaat cgaacaaatc 240
 aaccttgcca gtggtcagcg cgaagccgaa atccaacaat ccgaaggcga ggctcaggct 300
 gcggtcaatg cgtcaaatac cgagaaaate gcccgcatca accgcgcaa aggtgaagcg 360
 gaatccttgc gccttggtgc cgaagccaat gccgaagcca tccgtcaaat tgccgccgcc 420
 cttcaaacc aaggcgggtgc ggatgcggtc aatctgaaga ttgcggaaca atacgtcgct 480
 gcgttcaaca atcttgccaa agaaagcaat acgctgatta tgcccgcaa tgttgccgac 540
 atcggcagcc tgatttctgc cggtatgaaa attatcgaca gcagcaaaac cgccaaataa 600

<210> 3046

<211> 199
<212> PRT
<213> *Neisseria meningitidis*

<400> 3046
Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe Glu Glu Arg Asp
1 5 10 15
Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu Ala Ala Gly Ala
20 25 30
Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp Leu Val Pro Pro
35 40 45
Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr Ala Glu Arg Glu
50 55 60
Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys Ile Glu Gln Ile
65 70 75 80
Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln Gln Ser Glu Gly
85 90 95
Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu Lys Ile Ala Arg
100 105 110
Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg Leu Val Ala Glu
115 120 125
Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala Leu Gln Thr Gln
130 135 140
Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu Gln Tyr Val Ala
145 150 155 160
Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu Ile Met Pro Ala
165 170 175
Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly Met Lys Ile Ile
180 185 190
Asp Ser Ser Lys Thr Ala Lys
195

<210> 3047
<211> 951
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 3047
atggaatttt tcattatctt gttggcagcc gtcgccgttt tcggcttcaa atcctttgtc 60
gtcatccccc agcaggaagt ccacgttgtc gaaaggctcg ggcgtttcca tcgcgcctg 120
acggccggtt tgaatatttt gattcccttt atcgaccgag tcgcctaccg ccattcgctg 180
aaagaaatcc ctttagacgt acccagccag gtctgcatca cgcgcgataa tacgcaattg 240
actgttgacg gcatcatcta tttccaagta accgatccca aactcgctc atacggttcg 300
agcaactaca ttatggcaat taccagctt gcccaaacga cgctgcgttc cgttatcggg 360

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cgtatggagt tggacaaaac gtttgaagaa cgcgacgaaa tcaacagtac cgtcgtctcc 420
gccctcgatg aagccgcccgg ggcttgggggt gtgaaagtcc tccgttacga aatcaaggat 480
ttggttccgc cgcaagaaat ccttcgcgca atgcaggcac aaattaccgc cgaacgcgaa 540
aaacgcgccc gtattgccga atccgaaggc cgtaaaatcg aacaaatcaa ccttgccagt 600
ggtcagcgtg aagccgaaat ccaacaatcc gaaggcgagg ctcaaggctgc ggtcaatgcg 660
tccaatgccg agaaaaatgc ccgcatcaac cgcgccaaaag gcgaagcgga atccctgcgc 720
cttgttgccg aagccaatgc cgaagccaac cgtcaaattg ccgccgccct tcaaacccaa 780
agcggggcgg atgcggtcaa tctgaagatt gcgggacaat acgttaccgc gttcaaaaat 840
cttgccaaag aagacaatac gcggattaag cccgccaaag ttgccgaaat cgggaaccct 900
aattttcggc ggcatgaaaa attttcgcca gaagcaaaaa cggccaaata a 951

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<210> 3048

<211> 316

<212> PRT

<213> Neisseria gonorrhoeae

<400> 3048

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Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Ala Val Phe Gly Phe
  1             5             10             15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
      20             25             30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
      35             40             45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
      50             55             60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
      65             70             75             80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
      85             90             95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
      100            105            110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
      115            120            125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
      130            135            140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
      145            150            155            160

Leu Val Pro Pro Gln Glu Ile Leu Arg Ala Met Gln Ala Gln Ile Thr
      165            170            175

Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
      180            185            190

Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
      195            200            205

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Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Asn Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Ser Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Gly
 260 265 270
 Gln Tyr Val Thr Ala Phe Lys Asn Leu Ala Lys Glu Asp Asn Thr Arg
 275 280 285
 Ile Lys Pro Ala Lys Val Ala Glu Ile Gly Asn Pro Asn Phe Arg Arg
 290 295 300
 His Glu Lys Phe Ser Pro Glu Ala Lys Thr Ala Lys
 305 310 315

<210> 3049
 <211> 948
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3049
 atggaatttt tcattatott gctggcagcc gtcgttggtt tcggcttcaa atcctttggt 60
 gtcatcccac agcaggaagt ccacgttggtc gaaaggctcg ggcgtttcca tcgcgccttg 120
 acggccggtt tgaatatattt gattcccttt atcgaccgcg tcgcctaccg ccattcgctg 180
 aaagaaatcc ctttagacgt acccagccag gtctgcatca cgcgcgacaa tacgcagctg 240
 actgttgacg gtatcatcta tttccaagta accgacccca aactcgctc atacgggttcg 300
 agcaactaca ttatggcgat taccagctt gcccaaacga cgtgctgttc cgttatcggtg 360
 cgtatggaat tggacaaaac gtttgaagaa cgcgacgaaa tcaacagcac cgtcgtctcc 420
 gccctcgatg aagccgcccg agcttggggt gtgaagggtt tgcgttatga gattaaagac 480
 ttggttccgc cgcaagaaat ccttcgctca atgcaggcgc aaattactgc tgaacgcgaa 540
 aaacgcgccc gtatcgccga atccgaagggt cgtaaaatcg aacaaatcaa ccttgccagt 600
 ggtcagcgcg aagccgaaat ccaacaatcc gaaggcgagg cttaggctgc ggtcaatgcg 660
 tcaaatgccg agaaaatcgc cgcgcatcac cgcgccaaag gtgaagcgga atccttgccg 720
 cttgttgccg aagccaatgc cgaagccatc cgtcaaattg ccgcgcgcct tcaaacccaa 780
 ggcggtgcg atgcggtcaa tctgaagatt gcggaacaat acgtcgccgc gttcaacaat 840
 cttgccaaag aaagcaatac gctgattatg cccgccaatg ttgccgacat cggcagcctg 900
 atttctgcg gtatgaaaat tatcgacagc agcaaaaaccg ccaaataa 948

<210> 3050
 <211> 315
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3050
 Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Val Val Phe Gly Phe
 1 5 10 15
 Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
 20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
 35 40 45
 Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
 50 55 60
 Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
 65 70 75 80
 Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
 85 90 95
 Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
 100 105 110
 Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
 305 310 315

<210> 3051

<211> 948
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3051
 atggaatttt tcattatctt gttggtagcc gtcgccgttt tcggtttcaa atcctttggt 60
 gtcacccac aacaggaagt ccacgttgtc gaaaggctgg ggcgtttcca tcgcgccctg 120
 acggccggtt tgaatatctt gattcccttt atcgaccgcg tcgcctaccg ccattcgctg 180
 aaagaaatcc cttagacgt acccagccag gtctgcatca cgcgcgacaa tacgcagctg 240
 actgttgacg gcatcatcta tttccaagta accgacccca aactcgcctc atacggttcg 300
 agcaactaca ttatggcgat taccagctt gcccaaacga cgctgcgttc cgttatcggg 360
 cgtatggagt tggacaaaac gtttgaagaa cgcgacgaaa tcaacagtac tgttgttgcg 420
 gctttggacg aggcggcccg ggcttggggt gtgaagggtt tgcgttatga gattaaagac 480
 ttggttccgc cgcaagaaat ccttcgctca atgcaggcgc aaattactgc cgaacgcgaa 540
 aaacgcgccc gtatcgccga atccgaagggt cgtaaaatcg aacaaatcaa ccttgccagt 600
 ggtcagcgcg aagccgaaat ccaacaatcc gaaggcgagg ctgagctgc ggtcaatgcg 660
 tcaaattgcc agaaaatcgc ccgcatcaac cgcgccaaag gtgaagcgga atccttgccg 720
 cttgttgccg aagccaatgc cgaagccatc cgtcaaattg ccgccccct tcaaacccaa 780
 ggcggtgctg atgcggtcaa tctgaagatt gcggaacaat acgtcgctgc gttcaacaat 840
 cttgccaaag aaagcaatac gctgattatg cccgccaatg ttgccgacat cggcagcctg 900
 atttctgccc gtatgaaaaat tatcgacagc agcaaaaccg ccaaataa 948

<210> 3052
 <211> 315
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3052
 Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
 1 5 10 15
 Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
 20 25 30
 Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
 35 40 45
 Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
 50 55 60
 Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
 65 70 75 80
 Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
 85 90 95
 Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
 100 105 110
 Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp

145		150		155		160
Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr						
	165			170		175
Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys						
	180		185		190	
Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln						
	195		200		205	
Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu						
	210		215		220	
Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg						
	225		230		235	240
Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala						
	245		250		255	
Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu						
	260		265		270	
Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu						
	275		280		285	
Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly						
	290		295		300	
Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys						
	305		310		315	

<210> 3053
 <211> 948
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 3053
 atggaatttt tcattatctt gttggcagcc gtgcgcgttt tcggcttcaa atcctttgtc 60
 gtcaccccc agcaggaagt ccacgttggtc gaaaggctcg ggcgtttcca tcgcgccttg 120
 acggccggtt tgaatatctt gattcccttt atcgaccgcg tcgcctaccg ccattcgctg 180
 aaagaaatcc ctttagacgt acccagccag gtctgcatca cgcgcgataa tacgcaattg 240
 actgttgacg gcatcatcta ttccaagta accgatccca aactcgcctc atacggttcg 300
 agcaactaca ttatggcaat taccagctt gcccaaacga cgctgcgttc cgttatcggg 360
 cgtatggagt tggacaaaac gtttgaagaa cgcgacgaaa tcaacagtac cgtcgtctcc 420
 gccctcgatg aagccgcccg ggcttggggg gtgaaagtcc tccgttacga aatcaaggat 480
 ttggttcgcg cgcaagaaat ctttcgcgca atgcaggcac aaattaccgc cgaacgcgaa 540
 aaacgcgccc gtattgccga atccgaaggc cgtaaaatcg aacaaatcaa ccttgccagt 600
 ggtcagcgtg aagccgaaat ccaacaatcc gaaggcgagg ctacaggctgc ggtcaatgcg 660
 tccaatgccg agaaaatcgc ccgcatcaac cgcgccaaag gcgaagcgga atccctgcgc 720
 cttgttgccg aagccaatgc cgaagccatc cgtcaaattg ccgccgccct tcaaacccaa 780
 ggccggggcg atgcggtcaa tctgaagatt gcggaacaat acgtagccgc gttcaacaat 840
 cttgccaaag aaagcaatac gctgattatg cccgccaatg ttgccgacat cggcagcctg 900
 atttctgccg gcatgaaaat tatcgacagc agcaaaaccg ccaaataa 948

<210> 3054
<211> 315
<212> PRT
<213> Neisseria gonorrhoeae

<400> 3054
Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Ala Val Phe Gly Phe
1 5 10 15
Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30
Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45
Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60
Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80
Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95
Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110
Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125
Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
130 135 140
Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160
Leu Val Pro Pro Gln Glu Ile Leu Arg Ala Met Gln Ala Gln Ile Thr
165 170 175
Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
180 185 190
Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
195 200 205
Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
210 215 220
Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
225 230 235 240
Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
245 250 255
Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3055

<211> 948

<212> DNA

<213> Neisseria meningitidis

<400> 3055

atggaatttt tcattatctt gctggcagcc gtcgttggtt tcggcttcaa atcctttggt 60
gtcatcccac agcaggaagt ccacgttgtc gaaaggctcg ggcgtttcca tcgcgccctg 120
acggccgggt tgaatatctt gattcccttt atcgaccgag tcgcctaccg ccattcgctg 180
aaagaaatcc ctttagacgt acccagccag gtctgcatca cgcgcgacaa tacgcagctg 240
actgttgacg gtatcatcta tttccaagta accgaccca aactcgctc atacggttcg 300
agcaactaca ttatggcgat taccagctt gcccaaacga cgtgcgttc cgttatcggg 360
cgtatggaat tggacaaaac gtttgaagaa cgcgacgaaa tcaacagcac cgtcgtctcc 420
gccctcgatg aagccgccgg agcttggggt gtgaagggtt tgcgttatga gattaaagac 480
ttggttcgcg cgcaagaaat ctttcgctca atgcaggcgc aaattactgc tgaacgcgaa 540
aaacgcgccc gtatcgccga atccgaaggc cgtaaaatcg aacaaatcaa ctttgccagt 600
ggtcagcgcg aagccgaaat ccaacaatcc gaaggcgagg ctacggctgc ggtcaatgcg 660
tcaaatgccg agaaaatcgc ccgcatcaac cgcgccaaag gtgaagcgga atccttgccg 720

cttggtgccc aagccaatgc cgaagccatc cgtcaaatg ccgccgccct tcaaacccaa 780
ggcggtgccg atcggttcaa tctgaagatt gcggaacaat acgtcgccgc gttcaacaat 840
cttgccaaag aaagcaatac gctgattatg cccgccaatg ttgccgacat cggcagcctg 900
atctctgccg gtatgaaaat tatcgacagc agcaaaaccg ccaaataa 948

<210> 3056

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3056

Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Val Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
 85 90 95
 Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
 100 105 110
 Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
 305 310 315

<210> 3057

<211> 669

<212> DNA

<213> *Neisseria meningitidis*

<400> 3057

atgcagcagg caagctatgc gatgggcgtg gacatcggac gctccctgaa gcaaatgaag 60
 gaacagggcg cggaatcga ttgaaagtc ttaccgaag ccatgcaggc agtgtatgac 120
 ggcaaagaaa tcaaatgac cgaagagcag gtcagggaag tcatgatgaa attccttcag 180
 gaacaacagg ctaaagccgt agaaaaacac aaggcggacg cgaaggccaa taaagaaaaa 240
 ggcgaaacct ttctgaaaga aaatgccgcc aaagacggcg tgaagaccac tgcttcggcg 300

```

ctgcaataca aaatcaccaa acagggcgaa ggcaaacagc cgaccaaaga cgacatcggt 360
accgtggaat acgaaggccg cctgattgac ggtacggtat tgcacagcag caaagccaac 420
ggcggccccg tcaccttccc ttgagccaa gtgattccgg gttggaccga aggcgtacag 480
cttctgaaag aaggcggcga agccacgttc tacatcccgt ccaaccttgc ctaccgcgaa 540
caggggtgcg gcgacaaaat cgggtccgaac gccactttgg tatttgatgt gaaactggtc 600
aaaatcggcg caccgaaaa cgcgcccgcc aagcagccgg ctcaagtcga catcaaaaaa 660
gtaaattaa
669

```

<210> 3058

<211> 222

<212> PRT

<213> *Neisseria meningitidis*

<400> 3058

```

Met Gln Gln Ala Ser Tyr Ala Met Gly Val Asp Ile Gly Arg Ser Leu
  1                      5                      10                      15

```

```

Lys Gln Met Lys Glu Gln Gly Ala Glu Ile Asp Leu Lys Val Phe Thr
          20                      25                      30

```

```

Glu Ala Met Gln Ala Val Tyr Asp Gly Lys Glu Ile Lys Met Thr Glu
          35                      40                      45

```

```

Glu Gln Ala Gln Glu Val Met Met Lys Phe Leu Gln Glu Gln Gln Ala
          50                      55                      60

```

```

Lys Ala Val Glu Lys His Lys Ala Asp Ala Lys Ala Asn Lys Glu Lys
          65                      70                      75                      80

```

```

Gly Glu Ala Phe Leu Lys Glu Asn Ala Ala Lys Asp Gly Val Lys Thr
          85                      90                      95

```

```

Thr Ala Ser Gly Leu Gln Tyr Lys Ile Thr Lys Gln Gly Glu Gly Lys
          100                     105                     110

```

```

Gln Pro Thr Lys Asp Asp Ile Val Thr Val Glu Tyr Glu Gly Arg Leu
          115                     120                     125

```

```

Ile Asp Gly Thr Val Phe Asp Ser Ser Lys Ala Asn Gly Gly Pro Val
          130                     135                     140

```

```

Thr Phe Pro Leu Ser Gln Val Ile Pro Gly Trp Thr Glu Gly Val Gln
          145                     150                     155                     160

```

```

Leu Leu Lys Glu Gly Gly Glu Ala Thr Phe Tyr Ile Pro Ser Asn Leu
          165                     170                     175

```

```

Ala Tyr Arg Glu Gln Gly Ala Gly Asp Lys Ile Gly Pro Asn Ala Thr
          180                     185                     190

```

```

Leu Val Phe Asp Val Lys Leu Val Lys Ile Gly Ala Pro Glu Asn Ala
          195                     200                     205

```

```

Pro Ala Lys Gln Pro Ala Gln Val Asp Ile Lys Lys Val Asn
          210                     215                     220

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<210> 3059
 <211> 648
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 3059
 atgggcgtgg acatcggacg ctccctgaaa caaatgaagg aacagggcgc ggaaatcgat 60
 ttgaaagtct ttaccgatgc catgcaggca gtgtatgacg gcaaagaaat caaaatgacc 120
 gaagagcagg cccaggaagt gatgatgaaa ttctgcagg agcagcaggc taaagccgta 180
 gaaaaacaca aggcggatgc gaaggccaac aaagaaaaag gcgaagcctt cctgaaggaa 240
 aatgccgccg aagacggcgt gaagaccact gcttccggtc tgcagtacaa aatcaccaaa 300
 caggggtgaag gcaaacagcc gacaaaagac gacatcgtaa ccgtggaata cgaaggccgc 360
 ctgattgacg gtaccgtatt cgacagcagc aaagccaacg gcggcccggc caccttcctt 420
 ttgagccaag tgattccggg ttggaccgaa ggcgtacggc ttctgaaaga aggcggcgaa 480
 gccacgttct acatcccgtc caaccttgcc taccgcgaac aggggtgcggg cgaaaaaatc 540
 ggtccgaacg ccacttttgt atttgacgtg aaactgggtc aaatcggcgc acccgaaaac 600
 gcgcccgcga agcagccgga tcaagtcgac atcaaaaaag taaattaa 648

<210> 3060
 <211> 215
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 3060
 Met Gly Val Asp Ile Gly Arg Ser Leu Lys Gln Met Lys Glu Gln Gly
 1 5 10 15
 Ala Glu Ile Asp Leu Lys Val Phe Thr Asp Ala Met Gln Ala Val Tyr
 20 25 30
 Asp Gly Lys Glu Ile Lys Met Thr Glu Glu Gln Ala Gln Glu Val Met
 35 40 45
 Met Lys Phe Leu Gln Glu Gln Gln Ala Lys Ala Val Glu Lys His Lys
 50 55 60
 Ala Asp Ala Lys Ala Asn Lys Glu Lys Gly Glu Ala Phe Leu Lys Glu
 65 70 75 80
 Asn Ala Ala Glu Asp Gly Val Lys Thr Thr Ala Ser Gly Leu Gln Tyr
 85 90 95
 Lys Ile Thr Lys Gln Gly Glu Gly Lys Gln Pro Thr Lys Asp Asp Ile
 100 105 110
 Val Thr Val Glu Tyr Glu Gly Arg Leu Ile Asp Gly Thr Val Phe Asp
 115 120 125
 Ser Ser Lys Ala Asn Gly Gly Pro Ala Thr Phe Pro Leu Ser Gln Val
 130 135 140
 Ile Pro Gly Trp Thr Glu Gly Val Arg Leu Leu Lys Glu Gly Gly Glu
 145 150 155 160
 Ala Thr Phe Tyr Ile Pro Ser Asn Leu Ala Tyr Arg Glu Gln Gly Ala

165 170 175
 Gly Glu Lys Ile Gly Pro Asn Ala Thr Leu Val Phe Asp Val Lys Leu
 180 185 190
 Val Lys Ile Gly Ala Pro Glu Asn Ala Pro Ala Lys Gln Pro Asp Gln
 195 200 205
 Val Asp Ile Lys Lys Val Asn
 210 215

<210> 3061
 <211> 819
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3061
 atgaacacca ttttcaaaat cagcgcactg accctttccg ccgctttggc actttccgcc 60
 tgcggcaaaa aagaagccgc ccccgcatct gcattccgaac ctgccgccgc ttcttccgcg 120
 cagggcgaca cctcttcgat cggcagcacg atgcagcagg caagctatgc gatgggctg 180
 gacatcggac gctccctgaa gcaaatgaag gaacaggggc cggaatcga ttgaaagtc 240
 tttaccgaag ccatgcaggc agtgtatgac ggcaaagaaa tcaaatgac cgaagagcag 300
 gctcaggaag tcatgatgaa attccttcag gaacaacagg ctaaagccgt agaaaaacac 360
 aaggcggacg cgaaggccaa taaagaaaaa ggcaagcct ttctgaaaga aaatgccgcc 420
 aaagacggcg tgaagaccac tgcttccggc ctgcaatata aaatcaccaa acagggcgaa 480
 ggcaaacagc cgaccaaaga cgacatcggt accgtggaat acgaaggccg cctgattgac 540
 ggtacggtat tgcacagcag caaagccaac ggcggcccg tcaacctccc ttgagccaa 600
 gtgattctgg gttggaccga aggcgtacag cttctgaaag aaggcggcga agccacgttc 660
 tacatccgt ccaaccttgc ctaccgcgaa cagggtgcgg gcgacaaaat cggcccgaac 720
 gccactttgg tatttgatgt gaaactggtc aaaatcgcg caccgaaaa cgcgccgcc 780
 aagcagccgg ctcaagtcga catcaaaaaa gtaaattaa 819

<210> 3062
 <211> 272
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3062
 Met Asn Thr Ile Phe Lys Ile Ser Ala Leu Thr Leu Ser Ala Ala Leu
 1 5 10 15
 Ala Leu Ser Ala Cys Gly Lys Lys Glu Ala Ala Pro Ala Ser Ala Ser
 20 25 30
 Glu Pro Ala Ala Ala Ser Ser Ala Gln Gly Asp Thr Ser Ser Ile Gly
 35 40 45
 Ser Thr Met Gln Gln Ala Ser Tyr Ala Met Gly Val Asp Ile Gly Arg
 50 55 60
 Ser Leu Lys Gln Met Lys Glu Gln Gly Ala Glu Ile Asp Leu Lys Val
 65 70 75 80
 Phe Thr Glu Ala Met Gln Ala Val Tyr Asp Gly Lys Glu Ile Lys Met
 85 90 95

Thr Glu Glu Gln Ala Gln Glu Val Met Met Lys Phe Leu Gln Glu Gln
 100 105 110
 Gln Ala Lys Ala Val Glu Lys His Lys Ala Asp Ala Lys Ala Asn Lys
 115 120 125
 Glu Lys Gly Glu Ala Phe Leu Lys Glu Asn Ala Ala Lys Asp Gly Val
 130 135 140
 Lys Thr Thr Ala Ser Gly Leu Gln Tyr Lys Ile Thr Lys Gln Gly Glu
 145 150 155 160
 Gly Lys Gln Pro Thr Lys Asp Asp Ile Val Thr Val Glu Tyr Glu Gly
 165 170 175
 Arg Leu Ile Asp Gly Thr Val Phe Asp Ser Ser Lys Ala Asn Gly Gly
 180 185 190
 Pro Val Thr Phe Pro Leu Ser Gln Val Ile Leu Gly Trp Thr Glu Gly
 195 200 205
 Val Gln Leu Leu Lys Glu Gly Gly Glu Ala Thr Phe Tyr Ile Pro Ser
 210 215 220
 Asn Leu Ala Tyr Arg Glu Gln Gly Ala Gly Asp Lys Ile Gly Pro Asn
 225 230 235 240
 Ala Thr Leu Val Phe Asp Val Lys Leu Val Lys Ile Gly Ala Pro Glu
 245 250 255
 Asn Ala Pro Ala Lys Gln Pro Ala Gln Val Asp Ile Lys Lys Val Asn
 260 265 270

<210> 3063

<211> 819

<212> DNA

<213> Neisseria meningitidis

<400> 3063

atgaacacca ttttcaaaat cagcgcactg acccttttcg ccgcttttggc actttccgcc 60
 tgcggcaaaa aagaagccgc ccccgcatct gcatccgaac ctgccgccgc ttcttccgcg 120
 cagggcgaca cctcttcgat cggcagcacg atgcagcagg caagctatgc gatgggcggtg 180
 gacatcggac gctccctgaa gcaaataaag gaacagggcg cggaaatcga ttgaaagtc 240
 ttaccgaag ccatgcaggc agtgtatgac ggcaaagaaa tcaaaatgac cgaagagcag 300
 gctcaggaag tcatgatgaa attccttcag gaacaacagg ctaaagccgt agaaaaacac 360
 aaggcggacg cgaaggccaa taaagaaaaa ggcaagcct ttctgaaaga aaatgccgcc 420
 aaagacggcg tgaagaccac tgcttccggc ctgcaatata aaatcaccaa acagggcgaa 480
 ggcaaacagc cgaccaaaga cgacatcggt accgtggaat acgaaggccg cctgattgac 540
 ggtacggtat tcgacagcag caaagccaac ggcggcccg tcaccttccc tttgagccaa 600
 gtgattccgg gttggaccga aggcgtacag cttctgaaag aaggcggcga agccacgttc 660
 tacatcccggt ccaaccttgc ctaccgcgaa cagggtgcgg gcgacaaaat cgggtccgaac 720

gccacttttg tatttgatgt gaaactggtc aaaatcggcg caccgaaaa cgcgcccgcc 780
aagcagccgg ctcaagtcga catcaaaaaa gtaaattaa 819

<210> 3064
<211> 272
<212> PRT
<213> *Neisseria meningitidis*

<400> 3064
Met Asn Thr Ile Phe Lys Ile Ser Ala Leu Thr Leu Ser Ala Ala Leu
1 5 10 15
Ala Leu Ser Ala Cys Gly Lys Lys Glu Ala Ala Pro Ala Ser Ala Ser
20 25 30
Glu Pro Ala Ala Ala Ser Ser Ala Gln Gly Asp Thr Ser Ser Ile Gly
35 40 45
Ser Thr Met Gln Gln Ala Ser Tyr Ala Met Gly Val Asp Ile Gly Arg
50 55 60
Ser Leu Lys Gln Met Lys Glu Gln Gly Ala Glu Ile Asp Leu Lys Val
65 70 75 80
Phe Thr Glu Ala Met Gln Ala Val Tyr Asp Gly Lys Glu Ile Lys Met
85 90 95
Thr Glu Glu Gln Ala Gln Glu Val Met Met Lys Phe Leu Gln Glu Gln
100 105 110
Gln Ala Lys Ala Val Glu Lys His Lys Ala Asp Ala Lys Ala Asn Lys
115 120 125
Glu Lys Gly Glu Ala Phe Leu Lys Glu Asn Ala Ala Lys Asp Gly Val
130 135 140
Lys Thr Thr Ala Ser Gly Leu Gln Tyr Lys Ile Thr Lys Gln Gly Glu
145 150 155 160
Gly Lys Gln Pro Thr Lys Asp Asp Ile Val Thr Val Glu Tyr Glu Gly
165 170 175
Arg Leu Ile Asp Gly Thr Val Phe Asp Ser Ser Lys Ala Asn Gly Gly
180 185 190
Pro Val Thr Phe Pro Leu Ser Gln Val Ile Pro Gly Trp Thr Glu Gly
195 200 205
Val Gln Leu Leu Lys Glu Gly Gly Glu Ala Thr Phe Tyr Ile Pro Ser
210 215 220
Asn Leu Ala Tyr Arg Glu Gln Gly Ala Gly Asp Lys Ile Gly Pro Asn
225 230 235 240
Ala Thr Leu Val Phe Asp Val Lys Leu Val Lys Ile Gly Ala Pro Glu
245 250 255

Asn Ala Pro Ala Lys Gln Pro Ala Gln Val Asp Ile Lys Lys Val Asn
 260 265 270

<210> 3065
 <211> 819
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 3065
 atgaacacca ttttcaaaat cagcgcaactg acccttttccg ccgcttttggc acttttccgcc 60
 tgcggcaaaa aagaagccgc ccccgcatct gcatccgaac ctgccgccgc ttctgccgcg 120
 cagggcgaca cctcttcaat cggcagcacg atgcagcagg caagctatgc aatgggcgtg 180
 gacatcggac gtcacctgaa acaaataaag gaacagggcg cggaatcga ttgaaagtc 240
 ttaccgatg ccatgcaggc agtgtatgac ggcaaagaaa tcaaatgac cgaagagcag 300
 gccaggaag tgatgatgaa attcctgcag gagcagcagg ctaaagccgt agaaaaaac 360
 aaggcggatg cgaaggccaa caaagaaaaa ggcaagcct tcctgaagga aaatgccgcc 420
 aaagacggcg tgaagaccac tgcttccggt ctgcagtaca aaatcaccaa acagggtgaa 480
 ggcaaacagc cgacaaaaga cgacatcgtt accgtggaat acgaaggccg cctgattgac 540
 ggtaccgtat tcgacagcag caaagccaac ggcgccccgg ccaccttccc tttagacca 600
 gtgattccgg gttggaccga aggcgtacgg cttctgaaag aaggcggcga agccacgttc 660
 tacatcccgt ccaaccttgc ctaccgcgaa cagggtgcgg gcgaaaaaat cgggtccgaac 720
 gccacttttg tatttgacgt gaaactggtc aaaatcggcg caccgaaaa cgcgccccgc 780
 aagcagccgg atcaagtcga catcaaaaaa gtaaattaa 819

<210> 3066
 <211> 272
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 3066
 Met Asn Thr Ile Phe Lys Ile Ser Ala Leu Thr Leu Ser Ala Ala Leu
 1 5 10 15
 Ala Leu Ser Ala Cys Gly Lys Lys Glu Ala Ala Pro Ala Ser Ala Ser
 20 25 30
 Glu Pro Ala Ala Ala Ser Ala Ala Gln Gly Asp Thr Ser Ser Ile Gly
 35 40 45
 Ser Thr Met Gln Gln Ala Ser Tyr Ala Met Gly Val Asp Ile Gly Arg
 50 55 60
 Ser Leu Lys Gln Met Lys Glu Gln Gly Ala Glu Ile Asp Leu Lys Val
 65 70 75 80
 Phe Thr Asp Ala Met Gln Ala Val Tyr Asp Gly Lys Glu Ile Lys Met
 85 90 95
 Thr Glu Glu Gln Ala Gln Glu Val Met Met Lys Phe Leu Gln Glu Gln
 100 105 110

Gln Ala Lys Ala Val Glu Lys His Lys Ala Asp Ala Lys Ala Asn Lys
 115 120 125
 Glu Lys Gly Glu Ala Phe Leu Lys Glu Asn Ala Ala Lys Asp Gly Val
 130 135 140
 Lys Thr Thr Ala Ser Gly Leu Gln Tyr Lys Ile Thr Lys Gln Gly Glu
 145 150 155 160
 Gly Lys Gln Pro Thr Lys Asp Asp Ile Val Thr Val Glu Tyr Glu Gly
 165 170 175
 Arg Leu Ile Asp Gly Thr Val Phe Asp Ser Ser Lys Ala Asn Gly Gly
 180 185 190
 Pro Ala Thr Phe Pro Leu Ser Gln Val Ile Pro Gly Trp Thr Glu Gly
 195 200 205
 Val Arg Leu Leu Lys Glu Gly Gly Glu Ala Thr Phe Tyr Ile Pro Ser
 210 215 220
 Asn Leu Ala Tyr Arg Glu Gln Gly Ala Gly Glu Lys Ile Gly Pro Asn
 225 230 235 240
 Ala Thr Leu Val Phe Asp Val Lys Leu Val Lys Ile Gly Ala Pro Glu
 245 250 255
 Asn Ala Pro Ala Lys Gln Pro Asp Gln Val Asp Ile Lys Lys Val Asn
 260 265 270

<210> 3067
 <211> 819
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3067
 atgaacacca ttttcaaaat cagcgcactg acccttttccg ccgcttttggc acttttccgcc 60
 tgcggcaaaa aagaagccgc ccccgcatct gcatccgaac ctgccgccgc ttcttccgcg 120
 cagggcgaca cctcttcgat cggcagcacg atgcagcagg caagctatgc gatgggcgtg 180
 gacatcggac gctccctgaa gcaaatgaag gaacagggcg cgaaaatcga ttgaaagtc 240
 tttaccgaag ccatgcaggc agtgtatgac ggcaaagaaa tcaaaatgac cgaagagcag 300
 gctcaggaag tcatgatgaa attccttcag gaacaacagg ctaaagccgt agaaaaacac 360
 aagcgagacg cgaaggccaa taaagaaaaa ggcgaagcct ttctgaaaga aaatgccgcc 420
 aaagacggcg tgaagaccac tgcttccggc ctgcaataca aaatcaccaa acagggcgaa 480
 ggcaaacagc cgaccaaaga cgacatcggt accgtggaat acgaaggccg cctgattgac 540
 ggtacggtat tcgacagcag caaagccaac ggcggcccg tcaccttccc tttagccaa 600
 gtgattctgg gttggaccga aggcgtacag cttctgaaag aaggcggcga agccacgttc 660
 tacatccgt ccaaccttgc ctaccgcgaa caggggtgcg gcgacaaaat cggcccgaac 720
 gccactttgg tatttgatgt gaaactggtc aaaatcggcg caccggaaaa cgcgcccgcc 780
 aagcagccgg ctcaagtcga catcaaaaaa gtaaattaa 819

<210> 3068
<211> 272
<212> PRT
<213> Neisseria meningitidis

<400> 3068
Met Asn Thr Ile Phe Lys Ile Ser Ala Leu Thr Leu Ser Ala Ala Leu
1 5 10 15
Ala Leu Ser Ala Cys Gly Lys Lys Glu Ala Ala Pro Ala Ser Ala Ser
20 25 30
Glu Pro Ala Ala Ala Ser Ser Ala Gln Gly Asp Thr Ser Ser Ile Gly
35 40 45
Ser Thr Met Gln Gln Ala Ser Tyr Ala Met Gly Val Asp Ile Gly Arg
50 55 60
Ser Leu Lys Gln Met Lys Glu Gln Gly Ala Glu Ile Asp Leu Lys Val
65 70 75 80
Phe Thr Glu Ala Met Gln Ala Val Tyr Asp Gly Lys Glu Ile Lys Met
85 90 95
Thr Glu Glu Gln Ala Gln Glu Val Met Met Lys Phe Leu Gln Glu Gln
100 105 110
Gln Ala Lys Ala Val Glu Lys His Lys Ala Asp Ala Lys Ala Asn Lys
115 120 125
Glu Lys Gly Glu Ala Phe Leu Lys Glu Asn Ala Ala Lys Asp Gly Val
130 135 140
Lys Thr Thr Ala Ser Gly Leu Gln Tyr Lys Ile Thr Lys Gln Gly Glu
145 150 155 160
Gly Lys Gln Pro Thr Lys Asp Asp Ile Val Thr Val Glu Tyr Glu Gly
165 170 175
Arg Leu Ile Asp Gly Thr Val Phe Asp Ser Ser Lys Ala Asn Gly Gly
180 185 190
Pro Val Thr Phe Pro Leu Ser Gln Val Ile Leu Gly Trp Thr Glu Gly
195 200 205
Val Gln Leu Leu Lys Glu Gly Gly Glu Ala Thr Phe Tyr Ile Pro Ser
210 215 220
Asn Leu Ala Tyr Arg Glu Gln Gly Ala Gly Asp Lys Ile Gly Pro Asn
225 230 235 240
Ala Thr Leu Val Phe Asp Val Lys Leu Val Lys Ile Gly Ala Pro Glu
245 250 255
Asn Ala Pro Ala Lys Gln Pro Ala Gln Val Asp Ile Lys Lys Val Asn
260 265 270

<210> 3069
 <211> 1326
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3069
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 tgccaaagca agagcatcca aaccttttccg caaccgcgaca catccgtcat caacggccccg 120
 gaccggcccg tcggcatccc cgaccccgcc ggaacgacgg tcggcgggcg cggggccgctc 180
 tataccgttg taccgcacct gtccctgccc cactggggcg cgcaggattt cgccaaaagc 240
 ctgcaatcct tccgcctcgg ctgcgccaat ttgaaaaacc gccaaaggctg gcaggatgtg 300
 tgcgcccagg cctttcaaac ccccgctccat tcctttcagg caaaacagtt ttttgaacgc 360
 tatttcacgc cgtggcagggt tgcaggcaac ggaagccttg ccggtacggt taccggctat 420
 tacgaaccgg tgctgaaggg cgacgacagg cggacggcac aagcccgctt cccgatttac 480
 ggtattcccg acgattttat ctccgtcccc ctgcctgccg gtttgcgagg cggaaggcc 540
 cttgtccgca tcaggcagac gggaaaaaac agcggcacia tcgacaatac cggcggcaca 600
 cataccgccc acctctcccg attccccatc accgcgcgca caacagcaat caaaggcagg 660
 tttgaaggaa gccgcttccct cccctaccac acgcgcaacc aaatcaacgg cggcgcgctt 720
 gacggcaaaag ccccgatact cggttacgcc gaagaccctg tcgaactttt ttttatgcac 780
 atccaaggct cgggcggtct gaaaaccccg tcgggcaaat acatccgcat cggctatgcc 840
 gacaaaaacg aacatccyta cgtttccatc ggacgtata tggcggataa gggctacctc 900
 aaactcggac aaacctccat gcagggcatt aagtcttata tggcgcaaaa tccgcaacgc 960
 ctgcgcgaag ttttgggtca aaaccccgac tatatctttt tccgcgagct tgccggaagc 1020
 agcaatgacg gccctgtcgg cgactgggc acgcccgtga tgggggaata tgccggcgca 1080
 gtcgaccggc actacattac cttgggtgog cccttatttg tcgccaccgc ccatccggtt 1140
 acccgcaaaag cctcaaccg cctgattatg gcgcaggata ccggcagcgc gattaaaggc 1200
 gcggtgcgcg tggattatgt ttggggatac ggcgacgaag ccggcgaaact tgccggcaaa 1260
 cagaaaacca cgggatatgt ctggcagctc ctacccaacg gtatgaagcc cgaataccgc 1320
 ccgtaa 1326

<210> 3070
 <211> 441
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3070
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15
 Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30
 Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45
 Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60
 Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
 85 90 95
 Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
 100 105 110
 Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
 115 120 125
 Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
 130 135 140
 Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
 145 150 155 160
 Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
 165 170 175
 Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
 180 185 190
 Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
 195 200 205
 Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220
 Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240
 Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255
 Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270
 Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3071
 <211> 1326
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 3071
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 tgccaaagca ggagcatcca aacctttccg caaccgcaca catccgtcat caacggcccg 120
 gaccggccgg ccggcatccc cgaccgcgcc ggaacgacgg ttgccggcgg cggggccgctc 180
 tataccgttg tgccgcacct gtccatgccc cactgggcgg cgcaggattt tgccaaaagc 240
 ctgcaatcct tccgcctcgg ctgcgccaat ttgaaaaacc gccaaaggctg gcaggatgtg 300
 tgcgcccaag cttttcaaac ccccggtgat tcttttcagg caaagcggtt ttttgaacgc 360
 tatttcacgc cgtggcagggt tgcaggcaac ggaagccttg caggtacggt taccggctat 420
 tacgaaccgg tgctgaaggg cgacggcagg cggacggaac gggcccgcct cccgatttac 480
 ggtattcccg acgattttat ctccgtcccg ctgcctgccg gtttgccggg cggaaaaaac 540
 cttgtccgca tcaggcagac ggggaaaaac agcggcacga tcgacaatgc cggcggcacg 600
 cataccgcgg acctctcccg attccccatc accgcgcgca caacggcaat caaaggcagg 660
 tttgaaggaa gccgcttcc tccctaccac acgcgcaacc aaatcaacgg cggcgcgctt 720
 gacggcaaa gccccatcct cggttacgcc gaagaccggc tcgaactttt tttcatgcac 780
 atccaaggct cgggcccgcct gaaaaccccg tccggcaaat acatccgcat cggatacgcc 840
 gacaaaaacg aacatccgta tgtttccatc ggacgtata tggcggacaa aggctacctc 900
 aagctcgggc agacctgat gcagggcac aaagcctata tgcggcaaaa tccgcaacgc 960
 ctgcgcgaag ttttgggtca aaacccagc tatatcttt tccgcgagct tgccggaagc 1020
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 atcgaccggc actacattac cttgggcgcg cccttatttg tcgccaccgc ccatccggtt 1140
 acccgcaaag cctcaaccg cctgattatg gcgcaggata caggcagcgc gatcaaaggc 1200
 gcggtgcgcg tggattattt ttggggttac ggcgacgaag ccggcgaact tgccggcaaa 1260
 cagaaaaaca cgggatacgt ctggcagctc ctgcccaacg gcatgaagcc cgaataccgc 1320
 ccgtga 1326

<210> 3072
 <211> 441
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 3072
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 Ile Leu Ala Ala Cys Gln Ser Arg Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30
 Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Ala Gly Ile Pro Asp

35	40	45
Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val		
50	55	60
Pro His Leu Ser Met Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser		
65	70	75
Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly		
	85	90
Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe		
	100	105
Gln Ala Lys Arg Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala		
	115	120
Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val		
	130	135
Leu Lys Gly Asp Gly Arg Arg Thr Glu Arg Ala Arg Phe Pro Ile Tyr		
	145	150
Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg		
	165	170
Gly Gly Lys Asn Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly		
	180	185
Thr Ile Asp Asn Ala Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe		
	195	200
Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser		
	210	215
Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu		
	225	230
Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu		
	245	250
Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly		
	260	265
Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val		
	275	280
Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln		
	290	295
Thr Ser Met Gln Gly Ile Lys Ala Tyr Met Arg Gln Asn Pro Gln Arg		
	305	310
Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu		
	325	330
		335

Leu Ala Gly Ser Gly Asn Glu Gly Pro Val Gly Ala Leu Gly Thr Pro
340 345 350

Leu Met Gly Glu Tyr Ala Gly Ala Ile Asp Arg His Tyr Ile Thr Leu
355 360 365

Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3073

<211> 1326

<212> DNA

<213> *Neisseria meningitidis*

<400> 3073

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gaccggccgg tggcatccc cgaccccgcc ggaacgacgg tggcgccgg cggggcccgtt 180
tataccgttg tgcgcacact gtccctgccc cactgggctg cgaggattt cgccaaaagc 240
ctgcaatcct tccgctcgg ctgcgccaat ttgaaaaacc gccaaggctg gcaggatgtg 300
tgcgccaag cctttcaaac ccccgctccat tccgttcagg caaacagtt ttttgaacgc 360
tatttcacgc cgtggcagg tgcaggcaac ggaagccttg ccggtacggt taccggctat 420
tacgagccgg tgetgaagg cgacgacagg cggacggcac aagcccgtt cccgatttac 480
ggtattccc acgattttat ctccgtcccc ctgcctgccc gtttgcggag cggaaaagcc 540
cttgtccgca tcaggcagac gggaaaaaac agcggcaca tcgacaatac cggcggcaca 600
cataccgccc acctctccca attcccac actgcgcgca caacggcaat caaaggcagg 660
tttgaaggaa gccgcttcc cccctaccac acgcgcaacc aaatcaacgg cggcgcgctt 720
gacggcaaa ccccgatact cggttacgcc gaagacccc tgaactttt ttttatgcac 780
atccaaggct cgggcccgtt gaaaacccc tccggcaaat acatccgcat cggctatgcc 840
gacaaaaac aacatcccta cgtttccatc ggacgtata tggcggacaa aggctacctc 900
aagctcgggc agacctcgat gcagggcata aaagcctata tgcagcaaaa cccgcaacgc 960
ctcgccgaag ttttggggca aaaccccagc tatatctttt tccgagagct taccggaagc 1020
agcaatgacg gccctgtcgg cgcactgggc acgccgtga tgggcgagta cgcggcgca 1080
gtcgaccggc actacattac cttgggcggc cccttatttg tcgccaccgc ccatccggtt 1140
accgcaaa cctcaaccg cctgattatg gcgcaggata ccggcagcgc gattaaaggc 1200
gcggtgcggc tggattattt ttggggatac gcgcaggaag ccggcgaact tgccggcaaa 1260
cagaaaacca cgggatatgt ctggcagctt ctgcccacg gtatgaagcc cgaataaccg 1320
ccgtaa 1326
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<210> 3074

<211> 441

<212> PRT

<213> *Neisseria meningitidis*

<400> 3074

Met	Lys	Lys	Tyr	Leu	Phe	Arg	Ala	Ala	Leu	Cys	Gly	Ile	Ala	Ala	Ala
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Ile	Leu	Ala	Ala	Cys	Gln	Ser	Lys	Ser	Ile	Gln	Thr	Phe	Pro	Gln	Pro
			20					25					30		
Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Val	Gly	Ile	Pro	Asp
		35					40					45			
Pro	Ala	Gly	Thr	Thr	Val	Gly	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val
	50					55					60				
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser
65					70					75					80
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly
				85					90					95	
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Val
			100					105					110		
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala
		115					120					125			
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val
	130					135					140				
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr
145					150					155					160
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg
				165					170					175	
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly
			180					185					190		
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Gln	Phe
		195					200					205			
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser
	210					215					220				
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu
225					230					235					240
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu
				245					250					255	
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly
			260					265					270		
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val
		275					280					285			
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln

290		295		300
Thr Ser Met Gln Gly Ile Lys Ala Tyr Met Gln Gln Asn Pro Gln Arg				
305		310		315 320
Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu				
	325		330	335
Leu Thr Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro				
	340		345	350
Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu				
	355		360	365
Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala				
	370		375	380
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly				
385		390		395 400
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu				
	405		410	415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro				
	420		425	430
Asn Gly Met Lys Pro Glu Tyr Arg Pro				
	435		440	

<210> 3075
 <211> 858
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3075
 atggaacac agctttacat cggcatcatg tcgggaacca gcatggacgg ggcggatgcc 60
 gtactgatac ggatggacgg cggcaaatgg ctgggcgcgg aagggcacgc ctttaccccc 120
 taccocggca gggtacgccg ccaattgctg gatttgcagg acacaggcgc agacgaactg 180
 caccgcagca ggattttgtc gcaagaactc agccgcctat atgcgcaaac cgccgcgcaa 240
 ctgctgtgca gtcaaaacct cgcaccgtcc gacattaccg ccctcggtcg ccacgggcaa 300
 accgtccgac acgcgcggga acacgggtac agcatacagc ttgcccattt gccgctgctg 360
 gcgcagcttc cttacgacaa aaacgggtgca aagtcggcac aaggcaacat attgccgcaa 420
 ctgctcgaca ggctgctcgc ccaccgctat ttgcacaaac gccaccctaa aagcacgggg 480
 cgcgaaactgt ttgccataaa ttggctcgaa acctaccttg acggcggcga aaaccgatac 540
 gacgtattgc ggacgcttcc ccgttttacc gcgcaaaccg ttgacgacgc cgtctcacac 600
 gcagcggcag atgcccgta aatgtacatt tgcgacggcg gcatccgcaa tcctgtttta 660
 atggcggatt tggcagaatg tttcggcaca cgcgtttccc tgcacagcac cgccgacctg 720
 aacctcgatc cgcaatgggt ggaagccgcc gnatttgcgt ggttgccggc gtgttgatt 780
 aatcgcatc ccggtagtcc gcacaaagca accggcgcac ccaaaccgtg tattctganc 840
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<210> 3076
 <211> 366
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3076

Met	Glu	Thr	Gln	Leu	Tyr	Ile	Gly	Ile	Met	Ser	Gly	Thr	Ser	Met	Asp
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Gly	Ala	Asp	Ala	Val	Leu	Ile	Arg	Met	Asp	Gly	Gly	Lys	Trp	Leu	Gly
			20					25					30		
Ala	Glu	Gly	His	Ala	Phe	Thr	Pro	Tyr	Pro	Gly	Arg	Leu	Arg	Arg	Gln
		35					40					45			
Leu	Leu	Asp	Leu	Gln	Asp	Thr	Gly	Ala	Asp	Glu	Leu	His	Arg	Ser	Arg
	50					55					60				
Ile	Leu	Ser	Gln	Glu	Leu	Ser	Arg	Leu	Tyr	Ala	Gln	Thr	Ala	Ala	Glu
65					70				75						80
Leu	Leu	Cys	Ser	Gln	Asn	Leu	Ala	Pro	Ser	Asp	Ile	Thr	Ala	Leu	Gly
				85					90					95	
Cys	His	Gly	Gln	Thr	Val	Arg	His	Ala	Pro	Glu	His	Gly	Tyr	Ser	Ile
			100					105					110		
Gln	Leu	Ala	Asp	Leu	Pro	Leu	Leu	Ala	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
		115					120					125			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
	130						135				140				
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
145					150				155						160
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			165						170					175	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			180					185					190		
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Gln	Leu	Pro	Tyr	Asp
		195						200					205		Lys
Asn	Gly	Ala	Lys	Ser	Ala	Gln	Gly	Asn	Ile	Leu	Pro	Gln	Leu	Leu	Asp
	210					215					220				
Arg	Leu	Leu	Ala	His	Pro	Tyr	Phe	Ala	Gln	Arg	His	Pro	Lys	Ser	Thr
225					230					235					240
Gly	Arg	Glu	Leu	Phe	Ala	Ile	Asn	Trp	Leu	Glu	Thr	Tyr	Leu	Asp	Gly
				245					250					255	
Gly	Glu	Asn	Arg	Tyr	Asp	Val	Leu	Arg	Thr	Leu	Ser	Arg	Phe	Thr	Ala
			260					265					270		
Gln	Thr	Val	Cys	Asp	Ala	Val	Ser	His	Ala	Ala	Ala	Asp	Ala	Arg	Gln
		275					280					285			
Met	Tyr	Ile	Cys	Asp	Gly	Gly	Ile	Arg	Asn	Pro	Val	Leu	Met	Ala	Asp

290	295	300
Leu Ala Glu Cys Phe Gly Thr Arg Val Ser Leu His Ser Thr Ala Asp		
305	310	315 320
Leu Asn Leu Asp Pro Gln Trp Val Glu Ala Ala Xaa Phe Ala Trp Leu		
	325	330 335
Ala Ala Cys Trp Ile Asn Arg Ile Pro Gly Ser Pro His Lys Ala Thr		
	340	345 350
Gly Ala Ser Lys Pro Cys Ile Leu Xaa Ala Gly Tyr Tyr Tyr		
	355	360 365

<210> 3077
 <211> 1101
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 3077
 atggaacac agctttacat cggcattatg tcgggaacca gtatggacgg ggcggatgcc 60
 gtgctgttac ggatggacgg cggcaaatgg ctgggcgagg aagggcacgc ctttaccccc 120
 taccctgacc ggttgcgccg caaattgctg gatttgcagg acacaggcac agacgaactg 180
 caccgcagca ggatgtgtgc gcaagaactc agccgcctgt acgcgcaaac cgccgccgaa 240
 ctgctgtgca gtcaaaacct cgctccgtgc gacattaccg ccctcggtcg ccacgggcaa 300
 accgtccgac acgcgccgga acacggttac agcatacagc ttgccgattt gccgctgctg 360
 gcggaactga cgcgatttt taccgtcggc gacttccgca gccgcgacct tgctgccggc 420
 ggacaagggt cgccgctcgt cccgccttt cacgaagccc tgttccgca tgacaggga 480
 acacgcgtgg tactgaacat cggcgggatt gccaacatca gcgtactccc ccccggcgca 540
 cccgccttcg gcttcgacac agggccgggc aatatgctga tggacgcgtg gacgcaggca 600
 cactggcagc tgccctacga caaaaacggg gcaaaggcgg cacaaggcaa catattgccg 660
 caactgctcg gcaggctgct cgcccacccg tatttctcac aaccccaccc aaaaagcacg 720
 gggcgcgaa tgtttgcct aaattggctc gaaacctacc ttgacggcgg cgaaaaccga 780
 tacgacgtat tgcggaacgt ttcccgatcc accgcgcaaa ccgtttggga cgccgtctca 840
 cagcgacggc agatgcccg tcaaagtac atttgcggcg gcggcatccg caatcctgtt 900
 ttaatggcgg atttggcaga atgttccggc acacgcgttt ccctgcacag caccgccgaa 960
 ctgaacctcg atcctcaatg ggtggaggcg gccgcatttg cgtggttggc ggcgtgttgg 1020
 attaacccga ttcccgttag tccgcacaaa gcgaccggcg catccaaacc gtgtattctg 1080
 ggcgcgggat attattattg a 1101

<210> 3078
 <211> 366
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 3078
 Met Glu Thr Gln Leu Tyr Ile Gly Ile Met Ser Gly Thr Ser Met Asp
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 Gly Ala Asp Ala Val Leu Val Arg Met Asp Gly Gly Lys Trp Leu Gly
 20 25 30
 Ala Glu Gly His Ala Phe Thr Pro Tyr Pro Asp Arg Leu Arg Arg Lys
 35 40 45

Leu	Leu	Asp	Leu	Gln	Asp	Thr	Gly	Thr	Asp	Glu	Leu	His	Arg	Ser	Arg		
	50					55					60						
Met	Leu	Ser	Gln	Glu	Leu	Ser	Arg	Leu	Tyr	Ala	Gln	Thr	Ala	Ala	Glu		
	65				70					75					80		
Leu	Leu	Cys	Ser	Gln	Asn	Leu	Ala	Pro	Cys	Asp	Ile	Thr	Ala	Leu	Gly		
				85					90						95		
Cys	His	Gly	Gln	Thr	Val	Arg	His	Ala	Pro	Glu	His	Gly	Tyr	Ser	Ile		
			100					105					110				
Gln	Leu	Ala	Asp	Leu	Pro	Leu	Leu	Ala	Glu	Leu	Thr	Arg	Ile	Phe	Thr		
		115						120					125				
Val	Gly	Asp	Phe	Arg	Ser	Arg	Asp	Leu	Ala	Ala	Gly	Gly	Gln	Gly	Ala		
	130					135						140					
Pro	Leu	Val	Pro	Ala	Phe	His	Glu	Ala	Leu	Phe	Arg	Asp	Asp	Arg	Glu		
	145				150					155					160		
Thr	Arg	Val	Val	Leu	Asn	Ile	Gly	Gly	Ile	Ala	Asn	Ile	Ser	Val	Leu		
				165					170						175		
Pro	Pro	Gly	Ala	Pro	Ala	Phe	Gly	Phe	Asp	Thr	Gly	Pro	Gly	Asn	Met		
			180					185						190			
Leu	Met	Asp	Ala	Trp	Thr	Gln	Ala	His	Trp	Gln	Leu	Pro	Tyr	Asp	Lys		
		195					200					205					
Asn	Gly	Ala	Lys	Ala	Ala	Gln	Gly	Asn	Ile	Leu	Pro	Gln	Leu	Leu	Gly		
	210					215						220					
Arg	Leu	Leu	Ala	His	Pro	Tyr	Phe	Ser	Gln	Pro	His	Pro	Lys	Ser	Thr		
	225				230					235					240		
Gly	Arg	Glu	Leu	Phe	Ala	Leu	Asn	Trp	Leu	Glu	Thr	Tyr	Leu	Asp	Gly		
				245					250					255			
Gly	Glu	Asn	Arg	Tyr	Asp	Val	Leu	Arg	Thr	Leu	Ser	Arg	Phe	Thr	Ala		
			260					265						270			
Gln	Thr	Val	Trp	Asp	Ala	Val	Ser	His	Ala	Ala	Ala	Asp	Ala	Arg	Gln		
		275					280						285				
Met	Tyr	Ile	Cys	Gly	Gly	Gly	Ile	Arg	Asn	Pro	Val	Leu	Met	Ala	Asp		
	290					295					300						
Leu	Ala	Glu	Cys	Phe	Gly	Thr	Arg	Val	Ser	Leu	His	Ser	Thr	Ala	Glu		
	305				310					315					320		
Leu	Asn	Leu	Asp	Pro	Gln	Trp	Val	Glu	Ala	Ala	Ala	Phe	Ala	Trp	Leu		
				325					330					335			
Ala	Ala	Cys	Trp	Ile	Asn	Arg	Ile	Pro	Gly	Ser	Pro	His	Lys	Ala	Thr		
			340					345					350				

Gly Ala Ser Lys Pro Cys Ile Leu Gly Ala Gly Tyr Tyr Tyr
 355 360 365

<210> 3079
 <211> 1101
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 3079
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 taccgccgga ggttacgccg caaattgctg gatttgcagg acacaggcgc ggacgaactg 180
 caccgcagca ggatgttgct gcaagaactc agccgcctgt acgcgcaaac cgccgcgcaa 240
 ctgctgtgca gtcaaaacct cgcgccgtcc gacattaccg ccctcggtcg ccacgggcaa 300
 accgtcagac acgcgcggga acacagttac agcgtacagc ttgccgattt gccgtgtgtg 360
 gcggaacgga ctacagatttt taccgtcggc gacttcgcga gccgcgacct tgcggccggc 420
 ggacaaggcg cgccgctcgt cccgccttt caggaagccc tgttcgcgga cgacagggaa 480
 acacgcgcgg tactgaacat cggcgggatt gccaacatca gcgtactccc ccccgacgca 540
 ccgccttcg gcttcgacac aggaccgggc aatatgctga tggacgcgtg gatgcaggca 600
 cactggcagc ttcccttacga caaaaacggt gcaaaggcgg cacaaggcaa catattgccg 660
 caactgctcg acaggctgct cgcccaccgc tatttcgcac aacccccacc taaaagcacg 720
 gggcgcgaaac tgtttgccct aaattggctc gaaacctacc ttgacggcgg cgaaaaccga 780
 tacgacgtat tgcggacgct ttcccgatc accgcgcaaa ccgttttcga cgccgtctca 840
 cagcagcgcg cagatgcccg tcaaatgtac atttgcggcg gcggcatccg caatcctgtt 900
 ttaatggcgg atttggcaga atgtttcggc acacgcgttt ccctgcacag caccgcgcaa 960
 ctgaacctcg atccgcaatg ggtagaagcc gccgcgttcg catggatggc gccgtgttg 1020
 gtcaaccgca ttcccgttag tccgcacaaa gcaaccggcg catccaaacc gtgtattctg 1080
 ggcgcgggat attattattg a 1101

<210> 3080
 <211> 366
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3080
 Met Glu Thr Gln Leu Tyr Ile Gly Ile Met Ser Gly Thr Ser Met Asp
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 20 25 30
 Ala Glu Gly His Ala Phe Thr Pro Tyr Pro Gly Arg Leu Arg Arg Lys
 35 40 45
 Leu Leu Asp Leu Gln Asp Thr Gly Ala Asp Glu Leu His Arg Ser Arg
 50 55 60
 Met Leu Ser Gln Glu Leu Ser Arg Leu Tyr Ala Gln Thr Ala Ala Glu
 65 70 75 80
 Leu Leu Cys Ser Gln Asn Leu Ala Pro Ser Asp Ile Thr Ala Leu Gly
 85 90 95
 Cys His Gly Gln Thr Val Arg His Ala Pro Glu His Ser Tyr Ser Val

100 105 110
 Gln Leu Ala Asp Leu Pro Leu Leu Ala Glu Arg Thr Gln Ile Phe Thr
 115 120 125
 Val Gly Asp Phe Arg Ser Arg Asp Leu Ala Ala Gly Gly Gln Gly Ala
 130 135 140
 Pro Leu Val Pro Ala Phe His Glu Ala Leu Phe Arg Asp Asp Arg Glu
 145 150 155 160
 Thr Arg Ala Val Leu Asn Ile Gly Gly Ile Ala Asn Ile Ser Val Leu
 165 170 175
 Pro Pro Asp Ala Pro Ala Phe Gly Phe Asp Thr Gly Pro Gly Asn Met
 180 185 190
 Leu Met Asp Ala Trp Met Gln Ala His Trp Gln Leu Pro Tyr Asp Lys
 195 200 205
 Asn Gly Ala Lys Ala Ala Gln Gly Asn Ile Leu Pro Gln Leu Leu Asp
 210 215 220
 Arg Leu Leu Ala His Pro Tyr Phe Ala Gln Pro His Pro Lys Ser Thr
 225 230 235 240
 Gly Arg Glu Leu Phe Ala Leu Asn Trp Leu Glu Thr Tyr Leu Asp Gly
 245 250 255
 Gly Glu Asn Arg Tyr Asp Val Leu Arg Thr Leu Ser Arg Phe Thr Ala
 260 265 270
 Gln Thr Val Phe Asp Ala Val Ser His Ala Ala Ala Asp Ala Arg Gln
 275 280 285
 Met Tyr Ile Cys Gly Gly Gly Ile Arg Asn Pro Val Leu Met Ala Asp
 290 295 300
 Leu Ala Glu Cys Phe Gly Thr Arg Val Ser Leu His Ser Thr Ala Glu
 305 310 315 320
 Leu Asn Leu Asp Pro Gln Trp Val Glu Ala Ala Ala Phe Ala Trp Met
 325 330 335
 Ala Ala Cys Trp Val Asn Arg Ile Pro Gly Ser Pro His Lys Ala Thr
 340 345 350
 Gly Ala Ser Lys Pro Cys Ile Leu Gly Ala Gly Tyr Tyr Tyr
 355 360 365

<210> 3081

<211> 1101

<212> DNA

<213> Neisseria meningitidis

<400> 3081

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gtactgatac ggatggacgg cggcaaattg ctgggcgcgg aagggcacgc ctttaccgcc 120
taccgcgca ggttacgcg ccaattgctg gatttgcagg acacaggcgc agacgaactg 180
caccgcagca ggattttgtc gcaagaactc agccgcctat atgcgcaaac cgcgcgcgaa 240
ctgctgtgca gtcaaaacct cgcaccgtcc gacattaccg ccctcggtcg ccacgggcaa 300
accgtccgac acgcgcggga acacggttac agcatacagc ttgccgattt gccgctgctg 360
gcggaacgga cgcggatttt taccgtcggc gacttccgca gccgcgacct tgcggccggc 420
ggacaaggcg cgcactcgt ccccgcttt caggaagccc tggtccgga caacagggaa 480
acacgcgcgg tactgaacat cggcgggatt gccaacatca gcgtactccc ccccgacgca 540
ccgccttcg gcttcgacac agggccgggc aatatgctga tggacgcgtg gacgcaggca 600
cactggcagc ttccttacga caaaaacggt gcaaaggcgg cacaaggcaa catattgccg 660
caactgctcg acaggctgct cgcaccaccg tatttcgcac aaccaccacc taaaagcacg 720
gggcgcgaac tgtttgcct aaattggctc gaaacctacc ttgacggcgg cgaaaaccga 780
tacgacgtat tgcggacgct ttccgtttt accgcgcaaa ccgtttgga cgcgtctca 840
cagcagcggc cagatgccg tcaaatgtac atttgcggcg gcggcatccg caatcctgtt 900
ttaatggcgg atttggcaga atgttcggc acacgcgttt ccctgcacag caccgcgcac 960
ctgaacctcg atccgcaatg ggtggaagcc gccgnatttg cgtggttggc ggcgtgttgg 1020
attaatcgca ttcccggtag tccgcacaaa gcaaccggcg catccaaacc gtgtattctg 1080
ancgcgggat attattattg a 1101

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<210> 3082

<211> 366

<212> PRT

<213> *Neisseria meningitidis*

<400> 3082

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Met Glu Thr Gln Leu Tyr Ile Gly Ile Met Ser Gly Thr Ser Met Asp
 1             5             10            15

Gly Ala Asp Ala Val Leu Ile Arg Met Asp Gly Gly Lys Trp Leu Gly
      20             25            30

Ala Glu Gly His Ala Phe Thr Pro Tyr Pro Gly Arg Leu Arg Arg Gln
      35             40            45

Leu Leu Asp Leu Gln Asp Thr Gly Ala Asp Glu Leu His Arg Ser Arg
      50             55            60

Ile Leu Ser Gln Glu Leu Ser Arg Leu Tyr Ala Gln Thr Ala Ala Glu
      65             70            75            80

Leu Leu Cys Ser Gln Asn Leu Ala Pro Ser Asp Ile Thr Ala Leu Gly
      85             90            95

Cys His Gly Gln Thr Val Arg His Ala Pro Glu His Gly Tyr Ser Ile
      100            105           110

Gln Leu Ala Asp Leu Pro Leu Leu Ala Glu Arg Thr Arg Ile Phe Thr
      115            120           125

Val Gly Asp Phe Arg Ser Arg Asp Leu Ala Ala Gly Gly Gln Gly Ala
      130            135           140

Pro Leu Val Pro Ala Phe His Glu Ala Leu Phe Arg Asp Asn Arg Glu
      145            150           155           160

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Thr Arg Ala Val Leu Asn Ile Gly Gly Ile Ala Asn Ile Ser Val Leu
 165 170 175
 Pro Pro Asp Ala Pro Ala Phe Gly Phe Asp Thr Gly Pro Gly Asn Met
 180 185 190
 Leu Met Asp Ala Trp Thr Gln Ala His Trp Gln Leu Pro Tyr Asp Lys
 195 200 205
 Asn Gly Ala Lys Ala Ala Gln Gly Asn Ile Leu Pro Gln Leu Leu Asp
 210 215 220
 Arg Leu Leu Ala His Pro Tyr Phe Ala Gln Pro His Pro Lys Ser Thr
 225 230 235 240
 Gly Arg Glu Leu Phe Ala Leu Asn Trp Leu Glu Thr Tyr Leu Asp Gly
 245 250 255
 Gly Glu Asn Arg Tyr Asp Val Leu Arg Thr Leu Ser Arg Phe Thr Ala
 260 265 270
 Gln Thr Val Cys Asp Ala Val Ser His Ala Ala Ala Asp Ala Arg Gln
 275 280 285
 Met Tyr Ile Cys Gly Gly Gly Ile Arg Asn Pro Val Leu Met Ala Asp
 290 295 300
 Leu Ala Glu Cys Phe Gly Thr Arg Val Ser Leu His Ser Thr Ala Asp
 305 310 315 320
 Leu Asn Leu Asp Pro Gln Trp Val Glu Ala Ala Xaa Phe Ala Trp Leu
 325 330 335
 Ala Ala Cys Trp Ile Asn Arg Ile Pro Gly Ser Pro His Lys Ala Thr
 340 345 350
 Gly Ala Ser Lys Pro Cys Ile Leu Xaa Ala Gly Tyr Tyr Tyr
 355 360 365

<210> 3083

<211> 1101

<212> DNA

<213> *Neisseria meningitidis*

<400> 3083

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 taccgagcga gggtacgccc caaattgctg gatttgacag acacaggcgc ggacgaactg 180
 caccgcagca ggatgttgct gcaagaactc agccgcctgt acgcgcaaac cgccgccgaa 240
 ctgctgtgca gtcaaaacct cgcgcgctcc gacattaccg ccctcggtcg ccacgggcaa 300
 accgtcagac acgcgccgga acacagttac agcgtacagc ttgccgattt gccgctgctg 360
 gcggaacgga ctacagattt taccgtcggc gacttccgca gccgcgacct tgcggccggc 420
 ggacaaggcg cgccgctcgt cccgccttt caccgaagccc tggtccgca cgacagggaa 480
 acacgcgcgg tactgaacat cggcgggatt gccaatca gcgtactccc ccccgacgca 540

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ccgccttcg gcttcgacac aggaccgggc aatatgctga tggacgcgtg gatgcaggca 600
cactggcagc ttccttacga caaaaacggg gcaaaggcgg cacaaggcaa catattgccg 660
caactgctcg acaggctgct cgcccaccgc tatttcgcac aaccccaccc taaaagcacg 720
gggcgcgaac tgtttgccct aaattggctc gaaacctacc ttgacggcgg cgaaaaccga 780
tacgacgtat tgcggacgct ttcccgattc accgcgcaaa ccgttttcga cgccgtctca 840
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ttaatggcgg atttggcaga atgtttcggc acacgcgttt cctgcacag caccgccgaa 960
ctgaacctcg atccgcaatg ggtagaagcc gccgcgttcg catggatggc ggcgtgttg 1020
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<210> 3084

<211> 366

<212> PRT

<213> *Neisseria meningitidis*

<400> 3084

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Met Glu Thr Gln Leu Tyr Ile Gly Ile Met Ser Gly Thr Ser Met Asp
  1             5             10             15

Gly Ala Asp Ala Val Leu Ile Arg Met Asp Gly Gly Lys Trp Leu Gly
      20             25             30

Ala Glu Gly His Ala Phe Thr Pro Tyr Pro Gly Arg Leu Arg Arg Lys
      35             40             45

Leu Leu Asp Leu Gln Asp Thr Gly Ala Asp Glu Leu His Arg Ser Arg
      50             55             60

Met Leu Ser Gln Glu Leu Ser Arg Leu Tyr Ala Gln Thr Ala Ala Glu
      65             70             75             80

Leu Leu Cys Ser Gln Asn Leu Ala Pro Ser Asp Ile Thr Ala Leu Gly
      85             90             95

Cys His Gly Gln Thr Val Arg His Ala Pro Glu His Ser Tyr Ser Val
      100            105            110

Gln Leu Ala Asp Leu Pro Leu Leu Ala Glu Arg Thr Gln Ile Phe Thr
      115            120            125

Val Gly Asp Phe Arg Ser Arg Asp Leu Ala Ala Gly Gly Gln Gly Ala
      130            135            140

Pro Leu Val Pro Ala Phe His Glu Ala Leu Phe Arg Asp Asp Arg Glu
      145            150            155            160

Thr Arg Ala Val Leu Asn Ile Gly Gly Ile Ala Asn Ile Ser Val Leu
      165            170            175

Pro Pro Asp Ala Pro Ala Phe Gly Phe Asp Thr Gly Pro Gly Asn Met
      180            185            190

Leu Met Asp Ala Trp Met Gln Ala His Trp Gln Leu Pro Tyr Asp Lys
      195            200            205

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Asn Gly Ala Lys Ala Ala Gln Gly Asn Ile Leu Pro Gln Leu Leu Asp
 210 215 220
 Arg Leu Leu Ala His Pro Tyr Phe Ala Gln Pro His Pro Lys Ser Thr
 225 230 235 240
 Gly Arg Glu Leu Phe Ala Leu Asn Trp Leu Glu Thr Tyr Leu Asp Gly
 245 250 255
 Gly Glu Asn Arg Tyr Asp Val Leu Arg Thr Leu Ser Arg Phe Thr Ala
 260 265 270
 Gln Thr Val Phe Asp Ala Val Ser His Ala Ala Ala Asp Ala Arg Gln
 275 280 285
 Met Tyr Ile Cys Gly Gly Gly Ile Arg Asn Pro Val Leu Met Ala Asp
 290 295 300
 Leu Ala Glu Cys Phe Gly Thr Arg Val Ser Leu His Ser Thr Ala Glu
 305 310 315 320
 Leu Asn Leu Asp Pro Gln Trp Val Glu Ala Ala Ala Phe Ala Trp Met
 325 330 335
 Ala Ala Cys Trp Val Asn Arg Ile Pro Gly Ser Pro His Lys Ala Thr
 340 345 350
 Gly Ala Ser Lys Pro Cys Ile Leu Gly Ala Gly Tyr Tyr Tyr
 355 360 365

<210> 3085

<211> 1431

<212> DNA

<213> *Neisseria meningitidis*

<400> 3085

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 atcaaaagccc aaacgcacac cggtctggga aacctgtcg aaccttgac cggcatcacc 180
 gaacgcgtcg gcaggatttg gggcgtggtg tcgcacctca actgcgtcgc cgacacgccc 240
 gaactgcgcg ccgtctataa cgaactgatg cccgaaatca ccgtcttctt caccgaaatc 300
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 ggcgtttata tggatttgta cgcacgcgaa ggcaaacgcg gcggcgcgtg gatgaacgac 660
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 gacgaaggcc gtctgaaaaa ctggcaacag gttttagaca gcgtgcgcaa aaaagtcgcc 1140
 gtcattccagc cgcccgaata caaccgcttc gccttgagct tcggccacat cttcgcaggc 1200

ggctattccg cagctnatta cagctacgcg tgggcggaag tattgagcgc ggacgcatac 1260
 gccgcctttg aagaaagcga cgatgtcgcc gccacaggca aacgcttttg gcaggaaatc 1320
 ctcccgctcg ggnatcgcg cagcgngca gaatccttca aagccttccg cggccgcgaa 1380
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<210> 3086

<211> 426

<212> PRT

<213> *Neisseria meningitidis*

<400> 3086

Asn	Thr	Val	Glu	Pro	Leu	Thr	Gly	Ile	Thr	Glu	Arg	Val	Gly	Arg	Ile	1	5	10	15
Trp	Gly	Val	Val	Ser	His	Leu	Asn	Cys	Val	Ala	Asp	Thr	Pro	Glu	Leu	20	25	30	
Arg	Ala	Val	Tyr	Asn	Glu	Leu	Met	Pro	Glu	Ile	Thr	Val	Phe	Phe	Thr	35	40	45	
Glu	Ile	Gly	Gln	Asp	Ile	Glu	Leu	Tyr	Asn	Arg	Phe	Lys	Thr	Ile	Lys	50	55	60	
Asn	Ser	Pro	Glu	Phe	Asp	Thr	Leu	Ser	Pro	Ala	Gln	Lys	Thr	Lys	Leu	65	70	75	80
Asn	His	Tyr	Ala	Ser	Glu	Lys	Leu	Arg	Glu	Ala	Lys	Tyr	Ala	Phe	Ser	85	90	95	
Glu	Thr	Xaa	Val	Lys	Lys	Tyr	Phe	Pro	Val	Gly	Xaa	Val	Leu	Asn	Gly	100	105	110	
Leu	Phe	Ala	Gln	Xaa	Lys	Lys	Leu	Tyr	Gly	Ile	Gly	Phe	Thr	Glu	Lys	115	120	125	
Thr	Val	Pro	Val	Trp	His	Lys	Asp	Val	Arg	Tyr	Xaa	Glu	Leu	Gln	Gln	130	135	140	
Asn	Gly	Glu	Xaa	Ile	Gly	Gly	Val	Tyr	Met	Asp	Leu	Tyr	Ala	Arg	Glu	145	150	155	160
Gly	Lys	Arg	Gly	Gly	Ala	Trp	Met	Asn	Asp	Tyr	Lys	Gly	Arg	Arg	Arg	165	170	175	
Phe	Ser	Asp	Gly	Thr	Leu	Gln	Leu	Pro	Thr	Ala	Tyr	Leu	Val	Cys	Asn	180	185	190	
Phe	Ala	Pro	Pro	Val	Gly	Gly	Arg	Glu	Ala	Arg	Leu	Ser	His	Asp	Glu	195	200	205	
Ile	Leu	Ile	Leu	Phe	His	Glu	Thr	Gly	His	Gly	Leu	His	His	Leu	Leu	210	215	220	
Thr	Gln	Val	Asp	Glu	Leu	Gly	Val	Ser	Gly	Ile	Asn	Gly	Val	Xaa	Trp	225	230	235	240

Asp Ala Val Glu Leu Pro Ser Gln Phe Met Glu Asn Phe Val Trp Glu
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 Tyr Asn Val Leu Ala Gln Xaa Ser Ala His Glu Glu Thr Gly Val Pro
 260 265 270
 Leu Pro Lys Glu Leu Xaa Asp Lys Xaa Leu Ala Ala Lys Asn Phe Gln
 275 280 285
 Xaa Gly Met Phe Xaa Val Arg Gln Xaa Glu Phe Ala Leu Phe Asp Met
 290 295 300
 Met Ile Tyr Ser Glu Asp Asp Glu Gly Arg Leu Lys Asn Trp Gln Gln
 305 310 315 320
 Val Leu Asp Ser Val Arg Lys Lys Val Ala Val Ile Gln Pro Pro Glu
 325 330 335
 Tyr Asn Arg Phe Ala Leu Ser Phe Gly His Ile Phe Ala Gly Gly Tyr
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 Ser Ala Ala Xaa Tyr Ser Tyr Ala Trp Ala Glu Val Leu Ser Ala Asp
 355 360 365
 Ala Tyr Ala Ala Phe Glu Glu Ser Asp Asp Val Ala Ala Thr Gly Lys
 370 375 380
 Arg Phe Trp Gln Glu Ile Leu Ala Val Gly Xaa Ser Arg Ser Gly Ala
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<210> 3087

<211> 2037

<212> DNA

<213> Neisseria gonorrhoeae

<400> 3087

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 gtcaaagcgc aaacgcacac cggctgggcg aacaccgtcg agcgtctgac cggcatcacc 180
 gaacgcgtcg gcaggatttg gggcgctcgtg tcccatctca actccgtcgt cgacacgccc 240
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 gccgcgcaaa gcgaaggcaa aacaggttac aaaatcggct tgcagattcc gcactacctt 660
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 acgctcgaaa acgcattgaa aaccgcaaaa ctgctcggct ttaaaaatta cgccgaattg 840

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gaaatccttg ccgtcggcgg ctcccgcagc gcggcggaat cttcaaaagc cttccgcgga 1980
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<210> 3088
 <211> 678
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 3088

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			20					25					30		
Glu	Ala	Arg	Gly	Gln	Ile	Ala	Ala	Val	Lys	Ala	Gln	Thr	His	Thr	Gly
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Arg	Ile	Trp	Gly	Val	Val	Ser	His	Leu	Asn	Ser	Val	Val	Asp	Thr	Pro
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Phe	Thr	Glu	Ile	Gly	Gln	Asp	Ile	Glu	Leu	Tyr	Asn	Arg	Phe	Lys	Thr
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Ile	Lys	Asn	Ser	Pro	Glu	Phe	Ala	Thr	Leu	Ser	Pro	Ala	Gln	Lys	Thr
	115						120					125			
Lys	Leu	Asp	His	Asp	Leu	Arg	Asp	Phe	Val	Leu	Ser	Gly	Ala	Glu	Leu
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Pro	Pro	Glu	Arg	Gln	Ala	Glu	Leu	Ala	Lys	Leu	Gln	Thr	Glu	Gly	Ala
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Phe	Gly	Ile	Tyr	Phe	Asp	Asp	Ala	Ala	Pro	Leu	Ala	Gly	Ile	Pro	Glu		
			180					185					190				
Asp	Ala	Leu	Ala	Met	Phe	Ala	Ala	Ala	Gln	Ser	Glu	Gly	Lys	Thr			
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Gly	Tyr	Lys	Ile	Gly	Leu	Gln	Ile	Pro	His	Tyr	Leu	Ala	Val	Ile	Gln		
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Tyr	Ala	Gly	Asn	Arg	Glu	Leu	Arg	Glu	Gln	Ile	Tyr	Arg	Ala	Tyr	Val		
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Thr	Pro	Glu	Gln	Val	Leu	Asn	Phe	Leu	His	Asp	Leu	Ala	Arg	Arg	Ala		
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Lys	Pro	Tyr	Ala	Glu	Lys	Asp	Leu	Ala	Glu	Val	Lys	Ala	Phe	Ala	Arg		
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Lys	Lys	Tyr	Phe	Pro	Val	Gly	Lys	Val	Leu	Ala	Gly	Leu	Phe	Ala	Gln		
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Ile	Lys	Lys	Leu	Tyr	Gly	Ile	Gly	Phe	Ala	Glu	Lys	Thr	Val	Pro	Val		
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			420					425					430				
Thr	Leu	Gln	Leu	Pro	Thr	Ala	Tyr	Leu	Val	Cys	Asn	Phe	Ala	Pro	Pro		
		435					440					445					
Val	Gly	Gly	Lys	Glu	Ala	Arg	Leu	Ser	His	Asp	Glu	Ile	Leu	Thr	Leu		
	450					455					460						

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 Val Arg Lys Glu Val Ala Val Ile Gln Pro Pro Glu Tyr Asn Arg Phe
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 Ala Asn Ser Phe Gly His Ile Phe Ala Gly Gly Tyr Ser Ala Gly Tyr
 595 600 605
 Tyr Ser Tyr Ala Trp Ala Glu Val Leu Ser Thr Asp Ala Tyr Ala Ala
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 Phe Glu Glu Ser Asp Asp Val Ala Ala Thr Gly Lys Arg Phe Trp Gln
 625 630 635 640
 Glu Ile Leu Ala Val Gly Gly Ser Arg Ser Ala Ala Glu Ser Phe Lys
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<210> 3089

<211> 2037

<212> DNA

<213> *Neisseria meningitidis*

<400> 3089

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 gaactgcgcg ccgcctacaa tgaattaatg cccgaaatta ccgtcttctt caccgaaatc 300
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<210> 3090

<211> 678

<212> PRT

<213> Neisseria meningitidis

<400> 3090

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Gln Ile Lys Thr Glu Asp Ile Lys Pro Ala Leu Gln Thr Ala Ile Ala
      20              25              30

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Glu Ala Arg Glu Gln Ile Ala Ala Ile Lys Ala Gln Thr His Thr Gly
      35              40              45

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Trp Ala Asn Thr Val Glu Pro Leu Thr Gly Ile Thr Glu Arg Val Gly
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Arg Ile Trp Gly Val Val Ser His Leu Asn Ser Val Thr Asp Thr Pro
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Glu Leu Arg Ala Ala Tyr Asn Glu Leu Met Pro Glu Ile Thr Val Phe
      85              90              95

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Phe Thr Glu Ile Gly Gln Asp Ile Glu Leu Tyr Asn Arg Phe Lys Thr
     100             105             110

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Ile	Lys	Asn	Ser	Pro	Glu	Phe	Asp	Thr	Leu	Ser	His	Ala	Gln	Lys	Thr	115	120	125
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Pro	Pro	Glu	Gln	Gln	Ala	Glu	Leu	Ala	Lys	Leu	Gln	Thr	Glu	Gly	Ala	145	150	155
Gln	Leu	Ser	Ala	Lys	Phe	Ser	Gln	Asn	Val	Leu	Asp	Ala	Thr	Asp	Ala	165	170	175
Phe	Gly	Ile	Tyr	Phe	Asp	Asp	Ala	Ala	Pro	Leu	Ala	Gly	Ile	Pro	Glu	180	185	190
Asp	Ala	Leu	Ala	Met	Phe	Ala	Ala	Ala	Gln	Ser	Glu	Gly	Lys	Thr		195	200	205
Gly	Tyr	Lys	Ile	Gly	Leu	Gln	Ile	Pro	His	Tyr	Leu	Ala	Val	Ile	Gln	210	215	220
Tyr	Ala	Asp	Asn	Arg	Lys	Leu	Arg	Glu	Gln	Ile	Tyr	Arg	Ala	Tyr	Val	225	230	235
Thr	Arg	Ala	Ser	Glu	Leu	Ser	Asp	Asp	Gly	Lys	Phe	Asp	Asn	Thr	Ala	245	250	255
Asn	Ile	Asp	Arg	Thr	Leu	Glu	Asn	Ala	Leu	Gln	Thr	Ala	Lys	Leu	Leu	260	265	270
Gly	Phe	Lys	Asn	Tyr	Ala	Glu	Leu	Ser	Leu	Ala	Thr	Lys	Met	Ala	Asp	275	280	285
Thr	Pro	Glu	Gln	Val	Leu	Asn	Phe	Leu	His	Asp	Leu	Ala	Arg	Arg	Ala	290	295	300
Lys	Pro	Tyr	Ala	Glu	Lys	Asp	Leu	Ala	Glu	Val	Lys	Ala	Phe	Ala	Arg	305	310	315
Glu	Ser	Leu	Gly	Leu	Ala	Asp	Leu	Gln	Pro	Trp	Asp	Leu	Gly	Tyr	Ala	325	330	335
Gly	Glu	Lys	Leu	Arg	Glu	Ala	Lys	Tyr	Ala	Phe	Ser	Glu	Thr	Glu	Val	340	345	350
Lys	Lys	Tyr	Phe	Pro	Val	Gly	Lys	Val	Leu	Asn	Gly	Leu	Phe	Ala	Gln	355	360	365
Ile	Lys	Lys	Leu	Tyr	Gly	Ile	Gly	Phe	Thr	Glu	Lys	Thr	Val	Pro	Val	370	375	380
Trp	His	Lys	Asp	Val	Arg	Tyr	Phe	Glu	Leu	Gln	Gln	Asn	Gly	Glu	Thr	385	390	395
Ile	Gly	Gly	Val	Tyr	Met	Asp	Leu	Tyr	Ala	Arg	Glu	Gly	Lys	Arg	Gly	405	410	415

Gly Ala Trp Met Asn Asp Tyr Lys Gly Arg Arg Arg Phe Ser Asp Gly
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 Thr Leu Gln Leu Pro Thr Ala Tyr Leu Val Cys Asn Phe Thr Pro Pro
 435 440 445
 Val Gly Gly Lys Glu Ala Arg Leu Ser His Asp Glu Ile Leu Thr Leu
 450 455 460
 Phe His Glu Thr Gly His Gly Leu His His Leu Leu Thr Gln Val Asp
 465 470 475 480
 Glu Leu Gly Val Ser Gly Ile Asn Gly Val Glu Trp Asp Ala Val Glu
 485 490 495
 Leu Pro Ser Gln Phe Met Glu Asn Phe Val Trp Glu Tyr Asn Val Leu
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 Ala Gln Met Ser Ala His Glu Glu Thr Gly Val Pro Leu Pro Lys Glu
 515 520 525
 Leu Phe Asp Lys Met Leu Ala Ala Lys Asn Phe Gln Arg Gly Met Phe
 530 535 540
 Leu Val Arg Gln Met Glu Phe Ala Leu Phe Asp Met Met Ile Tyr Ser
 545 550 555 560
 Glu Asp Asp Glu Gly Arg Leu Lys Asn Trp Gln Gln Val Leu Asp Ser
 565 570 575
 Val Arg Lys Glu Val Ala Val Val Arg Pro Pro Glu Tyr Asn Arg Phe
 580 585 590
 Ala Asn Ser Phe Gly His Ile Phe Ala Gly Gly Tyr Ser Ala Gly Tyr
 595 600 605
 Tyr Ser Tyr Ala Trp Ala Glu Val Leu Ser Ala Asp Ala Tyr Ala Ala
 610 615 620
 Phe Glu Glu Ser Asp Asp Val Ala Ala Thr Gly Lys Arg Phe Trp Gln
 625 630 635 640
 Glu Ile Leu Ala Val Gly Gly Ser Arg Ser Ala Ala Glu Ser Phe Lys
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<210> 3091

<211> 2037

<212> DNA

<213> Neisseria meningitidis

<400> 3091

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<210> 3092

<211> 678

<212> PRT

<213> *Neisseria meningitidis*

<400> 3092

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      20             25            30

Glu Ala Arg Glu Gln Ile Ala Ala Ile Lys Ala Gln Thr His Thr Gly
      35             40            45

Trp Ala Asn Thr Val Glu Pro Leu Thr Gly Ile Thr Glu Arg Val Gly
      50             55            60

Arg Ile Trp Gly Val Val Ser His Leu Asn Ser Val Ala Asp Thr Pro
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65		70		75		80									
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				85					90					95	
Phe	Thr	Glu	Ile	Gly	Gln	Asp	Ile	Glu	Leu	Tyr	Asn	Arg	Phe	Lys	Thr
			100					105					110		
Ile	Lys	Asn	Ser	Pro	Glu	Phe	Asp	Thr	Leu	Ser	Pro	Ala	Gln	Lys	Thr
		115					120					125			
Lys	Leu	Asn	His	Asp	Leu	Arg	Asp	Phe	Val	Leu	Ser	Gly	Ala	Glu	Leu
	130					135					140				
Pro	Pro	Glu	Gln	Gln	Ala	Glu	Leu	Ala	Lys	Leu	Gln	Thr	Glu	Gly	Ala
145					150					155					160
Gln	Leu	Ser	Ala	Lys	Phe	Ser	Gln	Asn	Val	Leu	Asp	Ala	Thr	Asp	Ala
				165					170					175	
Phe	Gly	Ile	Tyr	Phe	Asp	Asp	Ala	Ala	Pro	Leu	Ala	Gly	Ile	Pro	Glu
			180					185					190		
Asp	Ala	Leu	Ala	Met	Phe	Ala	Ala	Ala	Ala	Gln	Ser	Glu	Ser	Lys	Thr
		195					200					205			
Gly	Tyr	Lys	Ile	Gly	Leu	Gln	Ile	Pro	His	Tyr	Leu	Ala	Val	Ile	Gln
	210					215					220				
Tyr	Ala	Asp	Asn	Arg	Glu	Leu	Arg	Glu	Gln	Ile	Tyr	Arg	Ala	Tyr	Val
225					230					235					240
Thr	Arg	Ala	Ser	Glu	Leu	Ser	Asp	Asp	Gly	Lys	Phe	Asp	Asn	Thr	Ala
				245					250					255	
Asn	Ile	Asp	Arg	Thr	Leu	Ala	Asn	Ala	Leu	Gln	Thr	Ala	Lys	Leu	Leu
			260					265					270		
Gly	Phe	Lys	Asn	Tyr	Ala	Glu	Leu	Ser	Leu	Ala	Thr	Lys	Met	Ala	Asp
		275					280					285			
Thr	Pro	Glu	Gln	Val	Leu	Asn	Phe	Leu	His	Asp	Leu	Ala	Arg	Arg	Ala
	290					295					300				
Lys	Pro	Tyr	Ala	Glu	Lys	Asp	Leu	Ala	Glu	Val	Lys	Ala	Phe	Ala	Arg
305					310					315					320
Glu	Ser	Leu	Asn	Leu	Ala	Asp	Leu	Gln	Pro	Trp	Asp	Leu	Gly	Tyr	Ala
			325						330					335	
Ser	Glu	Lys	Leu	Arg	Glu	Ala	Lys	Tyr	Ala	Phe	Ser	Glu	Thr	Glu	Val
			340					345					350		
Lys	Lys	Tyr	Phe	Pro	Val	Gly	Lys	Val	Leu	Asn	Gly	Leu	Phe	Ala	Gln
		355					360					365			
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[illegible]

<210> 3093
 <211> 1473
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 3093
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 caactttccg ccaaattctc caaaacgctc ctacacgcga ccgacgcgtt cggcatttac 540
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 gccgcgcaaa gcgaaggcaa aacagggttac aaaatcggct tgcagattcc gcactacctt 660
 gccgttatcc aatacgccgg caaccgcgaa ctgcgcgaac aaatctaccg cgctacgtt 720
 acccggtgcc gcgaactttc aaacgacggc aaattcgaca acaccgcaa catcgaccgc 780
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 gaacacctcg gtctcgccga cccgcagccg tgggacttga gctacgccg cgaaaaactg 1020
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<210> 3094
 <211> 491
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 3094
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 Glu Ala Arg Gly Gln Ile Ala Ala Val Lys Ala Gln Thr His Thr Gly
 35 40 45
 Trp Ala Asn Thr Val Glu Arg Leu Thr Gly Ile Thr Glu Arg Val Gly
 50 55 60
 Arg Ile Trp Gly Val Val Ser His Leu Asn Ser Val Val Asp Thr Pro
 65 70 75 80

Glu	Leu	Arg	Ala	Val	Tyr	Asn	Glu	Leu	Met	Pro	Glu	Ile	Thr	Val	Phe	85	90	95	
Phe	Thr	Glu	Ile	Gly	Gln	Asp	Ile	Glu	Leu	Tyr	Asn	Arg	Phe	Lys	Thr	100	105	110	
Ile	Lys	Asn	Ser	Pro	Glu	Phe	Ala	Thr	Leu	Ser	Pro	Ala	Gln	Lys	Thr	115	120	125	
Lys	Leu	Asp	His	Asp	Leu	Arg	Asp	Phe	Val	Leu	Ser	Gly	Ala	Glu	Leu	130	135	140	
Pro	Pro	Glu	Arg	Gln	Ala	Glu	Leu	Ala	Lys	Leu	Gln	Thr	Glu	Gly	Ala	145	150	155	160
Gln	Leu	Ser	Ala	Lys	Phe	Ser	Gln	Asn	Val	Leu	Asp	Ala	Thr	Asp	Ala	165	170	175	
Phe	Gly	Ile	Tyr	Phe	Asp	Asp	Ala	Ala	Pro	Leu	Ala	Gly	Ile	Pro	Glu	180	185	190	
Asp	Ala	Leu	Ala	Met	Phe	Ala	Ala	Ala	Ala	Gln	Ser	Glu	Gly	Lys	Thr	195	200	205	
Gly	Tyr	Lys	Ile	Gly	Leu	Gln	Ile	Pro	His	Tyr	Leu	Ala	Val	Ile	Gln	210	215	220	
Tyr	Ala	Gly	Asn	Arg	Glu	Leu	Arg	Glu	Gln	Ile	Tyr	Arg	Ala	Tyr	Val	225	230	235	240
Thr	Arg	Ala	Ser	Glu	Leu	Ser	Asn	Asp	Gly	Lys	Phe	Asp	Asn	Thr	Ala	245	250	255	
Asn	Ile	Asp	Arg	Thr	Leu	Glu	Asn	Ala	Leu	Lys	Thr	Ala	Lys	Leu	Leu	260	265	270	
Gly	Phe	Lys	Asn	Tyr	Ala	Glu	Leu	Ser	Leu	Ala	Thr	Lys	Met	Ala	Asp	275	280	285	
Thr	Pro	Glu	Gln	Val	Leu	Asn	Phe	Leu	His	Asp	Leu	Ala	Arg	Arg	Ala	290	295	300	
Lys	Pro	Tyr	Ala	Glu	Lys	Asp	Leu	Ala	Glu	Val	Lys	Ala	Phe	Ala	Arg	305	310	315	320
Glu	His	Leu	Gly	Leu	Ala	Asp	Pro	Gln	Pro	Trp	Asp	Leu	Ser	Tyr	Ala	325	330	335	
Gly	Glu	Lys	Leu	Arg	Glu	Ala	Lys	Tyr	Ala	Phe	Ser	Glu	Thr	Glu	Val	340	345	350	
Lys	Lys	Tyr	Phe	Pro	Val	Gly	Lys	Val	Leu	Ala	Gly	Leu	Phe	Ala	Gln	355	360	365	
Ile	Lys	Lys	Leu	Tyr	Gly	Ile	Gly	Phe	Ala	Glu	Lys	Thr	Val	Pro	Val	370	375	380	

Trp His Lys Asp Val Arg Tyr Phe Glu Leu Gln Gln Asn Gly Lys Thr
 385 390 395 400

Ile Gly Gly Val Tyr Met Asp Leu Tyr Ala Arg Glu Gly Lys Arg Gly
 405 410 415

Gly Ala Trp Met Asn Asp Tyr Lys Gly Arg Arg Arg Phe Ala Asp Gly
 420 425 430

Thr Leu Gln Leu Pro Thr Ala Tyr Leu Val Cys Asn Phe Ala Pro Pro
 435 440 445

Val Gly Gly Lys Glu Ala Arg Leu Ser His Asp Glu Ile Leu Thr Leu
 450 455 460

Phe His Glu Thr Gly His Gly Leu His His Leu Leu Thr Gln Val Asp
 465 470 475 480

Glu Leu Gly Val Ser Gly Ile Asn Gly Val Lys
 485 490

<210> 3095

<211> 2037

<212> DNA

<213> *Neisseria meningitidis*

<400> 3095

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gaacgcgtcg gcaggatttg gggcgtgggtg tcgcacctca actccgtcac cgacacgccc 240
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gccgtcatcc aatacgcgga caaccgcaaa ctgcgcgaac aaatctaccg cgcctacggt 720
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 gaaatcctcg ccgtcggcgg atcgcgcagc gcggcagaat ccttcaaagc cttccgcgga 1980
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<210> 3096

<211> 678

<212> PRT

<213> *Neisseria meningitidis*

<400> 3096

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Gln Ile Lys Thr Glu Asp Ile Lys Pro Ala Leu Gln Thr Ala Ile Ala
 20 25 30

Glu Ala Arg Glu Gln Ile Ala Ala Ile Lys Ala Gln Thr His Thr Gly
 35 40 45

Trp Ala Asn Thr Val Glu Pro Leu Thr Gly Ile Thr Glu Arg Val Gly
 50 55 60

Arg Ile Trp Gly Val Val Ser His Leu Asn Ser Val Thr Asp Thr Pro
 65 70 75 80

Glu Leu Arg Ala Ala Tyr Asn Glu Leu Met Pro Glu Ile Thr Val Phe
 85 90 95

Phe Thr Glu Ile Gly Gln Asp Ile Glu Leu Tyr Asn Arg Phe Lys Thr
 100 105 110

Ile Lys Asn Ser Pro Glu Phe Asp Thr Leu Ser His Ala Gln Lys Thr
 115 120 125

Lys Leu Asn His Asp Leu Arg Asp Phe Val Leu Ser Gly Ala Glu Leu
 130 135 140

Pro Pro Glu Gln Gln Ala Glu Leu Ala Lys Leu Gln Thr Glu Gly Ala
 145 150 155 160

Gln Leu Ser Ala Lys Phe Ser Gln Asn Val Leu Asp Ala Thr Asp Ala
 165 170 175

Phe Gly Ile Tyr Phe Asp Asp Ala Ala Pro Leu Ala Gly Ile Pro Glu
 180 185 190

Asp Ala Leu Ala Met Phe Ala Ala Ala Ala Gln Ser Glu Gly Lys Thr
 195 200 205

Gly Tyr Lys Ile Gly Leu Gln Ile Pro His Tyr Leu Ala Val Ile Gln
 210 215 220

Tyr Ala Asp Asn Arg Lys Leu Arg Glu Gln Ile Tyr Arg Ala Tyr Val
 225 230 235 240

Thr	Arg	Ala	Ser	Glu	Leu	Ser	Asp	Asp	Gly	Lys	Phe	Asp	Asn	Thr	Ala		
				245					250					255			
Asn	Ile	Asp	Arg	Thr	Leu	Glu	Asn	Ala	Leu	Gln	Thr	Ala	Lys	Leu	Leu		
			260					265					270				
Gly	Phe	Lys	Asn	Tyr	Ala	Glu	Leu	Ser	Leu	Ala	Thr	Lys	Met	Ala	Asp		
		275					280					285					
Thr	Pro	Glu	Gln	Val	Leu	Asn	Phe	Leu	His	Asp	Leu	Ala	Arg	Arg	Ala		
	290					295					300						
Lys	Pro	Tyr	Ala	Glu	Lys	Asp	Leu	Ala	Glu	Val	Lys	Ala	Phe	Ala	Arg		
305					310					315					320		
Glu	Ser	Leu	Gly	Leu	Ala	Asp	Leu	Gln	Pro	Trp	Asp	Leu	Gly	Tyr	Ala		
				325					330					335			
Gly	Glu	Lys	Leu	Arg	Glu	Ala	Lys	Tyr	Ala	Phe	Ser	Glu	Thr	Glu	Val		
			340					345					350				
Lys	Lys	Tyr	Phe	Pro	Val	Gly	Lys	Val	Leu	Asn	Gly	Leu	Phe	Ala	Gln		
		355					360					365					
Ile	Lys	Lys	Leu	Tyr	Gly	Ile	Gly	Phe	Thr	Glu	Lys	Thr	Val	Pro	Val		
	370					375						380					
Trp	His	Lys	Asp	Val	Arg	Tyr	Phe	Glu	Leu	Gln	Gln	Asn	Gly	Glu	Thr		
385					390					395					400		
Ile	Gly	Gly	Val	Tyr	Met	Asp	Leu	Tyr	Ala	Arg	Glu	Gly	Lys	Arg	Gly		
				405					410					415			
Gly	Ala	Trp	Met	Asn	Asp	Tyr	Lys	Gly	Arg	Arg	Arg	Phe	Ser	Asp	Gly		
			420					425					430				
Thr	Leu	Gln	Leu	Pro	Thr	Ala	Tyr	Leu	Val	Cys	Asn	Phe	Thr	Pro	Pro		
	435					440						445					
Val	Gly	Gly	Lys	Glu	Ala	Arg	Leu	Ser	His	Asp	Glu	Ile	Leu	Thr	Leu		
	450					455					460						
Phe	His	Glu	Thr	Gly	His	Gly	Leu	His	His	Leu	Leu	Thr	Gln	Val	Asp		
465					470					475					480		
Glu	Leu	Gly	Val	Ser	Gly	Ile	Asn	Gly	Val	Glu	Trp	Asp	Ala	Val	Glu		
				485				490						495			
Leu	Pro	Ser	Gln	Phe	Met	Glu	Asn	Phe	Val	Trp	Glu	Tyr	Asn	Val	Leu		
			500					505					510				
Ala	Gln	Met	Ser	Ala	His	Glu	Glu	Thr	Gly	Val	Pro	Leu	Pro	Lys	Glu		
		515					520					525					
Leu	Phe	Asp	Lys	Met	Leu	Ala	Ala	Lys	Asn	Phe	Gln	Arg	Gly	Met	Phe		
	530					535					540						

Leu Val Arg Gln Met Glu Phe Ala Leu Phe Asp Met Met Ile Tyr Ser
 545 550 555 560
 Glu Asp Asp Glu Gly Arg Leu Lys Asn Trp Gln Gln Val Leu Asp Ser
 565 570 575
 Val Arg Lys Glu Val Ala Val Val Arg Pro Pro Glu Tyr Asn Arg Phe
 580 585 590
 Ala Asn Ser Phe Gly His Ile Phe Ala Gly Gly Tyr Ser Ala Gly Tyr
 595 600 605
 Tyr Ser Tyr Ala Trp Ala Glu Val Leu Ser Ala Asp Ala Tyr Ala Ala
 610 615 620
 Phe Glu Glu Ser Asp Asp Val Ala Ala Thr Gly Lys Arg Phe Trp Gln
 625 630 635 640
 Glu Ile Leu Ala Val Gly Gly Ser Arg Ser Ala Ala Glu Ser Phe Lys
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 Ala Phe Arg Gly Arg Glu Pro Ser Ile Asp Ala Leu Leu Arg His Ser
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<210> 3097
 <211> 534
 <212> DNA
 <213> Neisseria meningitidis

<400> 3097
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 gcccgcgaca tggcggcggc aagccgsaaa atccccgaca gccgcytcaa ggccggcgac 360
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 aacggcgaat tcatccatgc ccccagcagc ggcaaaacca tcaaaaccga aaaactctcc 480
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<210> 3098
 <211> 177
 <212> PRT
 <213> Neisseria meningitidis

<400> 3098
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 20 25 30

Leu Ala Ser Cys Gly Thr Thr Ser Gly Lys His Arg Gln Pro Lys Pro
 20 25 30
 Lys Gln Thr Val Arg Gln Ile Gln Ala Val Arg Ile Ser His Ile Gly
 35 40 45
 Arg Thr Gln Gly Ser Gln Glu Leu Met Leu His Ser Leu Gly Leu Ile
 50 55 60
 Gly Thr Pro Tyr Lys Trp Gly Gly Ser Ser Thr Ala Thr Gly Phe Asp
 65 70 75 80
 Cys Ser Gly Met Ile Gln Leu Val Tyr Lys Asn Ala Leu Asn Val Lys
 85 90 95
 Leu Pro Arg Thr Ala Arg Asp Met Ala Ala Ala Ser Arg Lys Ile Pro
 100 105 110
 Asp Ser Arg Leu Lys Ala Gly Asp Ile Val Phe Phe Asn Thr Gly Gly
 115 120 125
 Ala His Arg Tyr Ser His Val Gly Leu Tyr Ile Gly Asn Gly Glu Phe
 130 135 140
 Ile His Ala Pro Gly Ser Gly Lys Thr Ile Lys Thr Glu Lys Leu Ser
 145 150 155 160
 Thr Pro Phe Tyr Ala Lys Asn Tyr Leu Gly Ala His Thr Phe Phe Thr
 165 170 175
 Glu

<210> 3101
 <211> 534
 <212> DNA
 <213> *Neisseria meningitidis*

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<210> 3102
 <211> 177
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3102

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35 40 45

Arg Thr Gln Gly Ser Gln Glu Leu Met Leu His Ser Leu Gly Leu Ile
50 55 60

Gly Thr Pro Tyr Lys Trp Gly Gly Ser Ser Thr Ala Thr Gly Phe Asp
65 70 75 80

Cys Ser Gly Met Ile Gln Phe Val Tyr Lys Asn Ala Leu Asn Val Lys
85 90 95

Leu Pro Arg Thr Ala Arg Asp Met Ala Ala Ala Ser Arg Lys Ile Pro
100 105 110

Asp Ser Arg Leu Lys Ala Gly Asp Leu Val Phe Phe Asn Thr Gly Gly
115 120 125

Ala His Arg Tyr Ser His Val Gly Leu Tyr Ile Gly Asn Gly Glu Phe
130 135 140

Ile His Ala Pro Ser Ser Gly Lys Thr Ile Lys Thr Glu Lys Leu Ser
145 150 155 160

Thr Pro Phe Tyr Ala Lys Asn Tyr Leu Gly Ala His Thr Phe Phe Thr
165 170 175

Glu

<210> 3103

<211> 1467

<212> DNA

<213> Neisseria meningitidis

<400> 3103

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cagggcgcgc catccgcaca aggcagtcaa gatatggcgg cggtttcgga agaaaatata 240
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acgttgaccc actgtaaagg cgattcttgt agtggcaata atttcttga tgaagaagta 720
cagctaaaat cagaatttga aaaattaagt gatgcagaca aaataagtaa ttacaagaaa 780

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gcccttcgtg ttcaaggcga accggcaaaa ggcgaaatgc ttgcgggccc ggccgtgtac 1140
aacggcgaag tactgcattt ccatacggaa aacggccgtc cgtacccgac caggggcagg 1200
tttgccgcaa aagtcgattt cggcagcaaa tctgtggacg gcattatcga cagcggcgat 1260
gatttgcata tgggtacgca aaaattcaaa gccgccatcg atggaaacgg ctttaagggg 1320
acttgacgg aaaatggcag cggggatgtt tccgaaaagt ttacggccc gccggcgag 1380
gaagtggcgg gaaaatacag ctatcgccc acagatgcgg aaaagggcgg attcggcgtg 1440
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<210> 3104

<211> 488

<212> PRT

<213> *Neisseria meningitidis*

<400> 3104

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Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Ala Leu Ser
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Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
      20             25             30

Thr Leu Ser Lys Pro Ala Ala Pro Val Val Ser Glu Lys Glu Thr Glu
      35             40             45

Ala Lys Glu Asp Ala Pro Gln Ala Gly Ser Gln Gly Gln Gly Ala Pro
      50             55             60

Ser Ala Gln Gly Ser Gln Asp Met Ala Ala Val Ser Glu Glu Asn Thr
      65             70             75             80

Gly Asn Gly Gly Ala Val Thr Ala Asp Asn Pro Lys Asn Glu Asp Glu
      85             90             95

Val Ala Gln Asn Asp Met Pro Gln Asn Ala Ala Gly Thr Asp Ser Ser
      100            105            110

Thr Pro Asn His Thr Pro Asp Pro Asn Met Leu Ala Gly Asn Met Glu
      115            120            125

Asn Gln Ala Thr Asp Ala Gly Glu Ser Ser Gln Pro Ala Asn Gln Pro
      130            135            140

Asp Met Ala Asn Ala Ala Asp Gly Met Gln Gly Asp Asp Pro Ser Ala
      145            150            155            160

Gly Gly Gln Asn Ala Gly Asn Thr Ala Ala Gln Gly Ala Asn Gln Ala
      165            170            175

Gly Asn Asn Gln Ala Ala Gly Ser Ser Asp Pro Ile Pro Ala Ser Asn
      180            185            190

Pro Ala Pro Ala Asn Gly Gly Ser Asn Phe Gly Arg Val Asp Leu Ala

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195 200 205
 Asn Gly Val Leu Ile Asp Gly Pro Ser Gln Asn Ile Thr Leu Thr His
 210 215 220
 Cys Lys Gly Asp Ser Cys Ser Gly Asn Asn Phe Leu Asp Glu Glu Val
 225 230 235 240
 Gln Leu Lys Ser Glu Phe Glu Lys Leu Ser Asp Ala Asp Lys Ile Ser
 245 250 255
 Asn Tyr Lys Lys Asp Gly Lys Asn Asp Lys Phe Val Gly Leu Val Ala
 260 265 270
 Asp Ser Val Gln Met Lys Gly Ile Asn Gln Tyr Ile Ile Phe Tyr Lys
 275 280 285
 Pro Lys Pro Thr Ser Phe Ala Arg Phe Arg Arg Ser Ala Arg Ser Arg
 290 295 300
 Arg Ser Leu Pro Ala Glu Met Pro Leu Ile Pro Val Asn Gln Ala Asp
 305 310 315 320
 Thr Leu Ile Val Asp Gly Glu Ala Val Ser Leu Thr Gly His Ser Gly
 325 330 335
 Asn Ile Phe Ala Pro Glu Gly Asn Tyr Arg Tyr Leu Thr Tyr Gly Ala
 340 345 350
 Glu Lys Leu Pro Gly Gly Ser Tyr Ala Leu Arg Val Gln Gly Glu Pro
 355 360 365
 Ala Lys Gly Glu Met Leu Ala Gly Ala Ala Val Tyr Asn Gly Glu Val
 370 375 380
 Leu His Phe His Thr Glu Asn Gly Arg Pro Tyr Pro Thr Arg Gly Arg
 385 390 395 400
 Phe Ala Ala Lys Val Asp Phe Gly Ser Lys Ser Val Asp Gly Ile Ile
 405 410 415
 Asp Ser Gly Asp Asp Leu His Met Gly Thr Gln Lys Phe Lys Ala Ala
 420 425 430
 Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr Glu Asn Gly Ser Gly
 435 440 445
 Asp Val Ser Gly Lys Phe Tyr Gly Pro Ala Gly Glu Glu Val Ala Gly
 450 455 460
 Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys Gly Gly Phe Gly Val
 465 470 475 480
 Phe Ala Gly Lys Lys Glu Gln Asp
 485

<210> 3105
 <211> 1290
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 3105
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 gttgttgctg aaaatgccg ggaaggggtg ctgccgaaag aaaagaaaga tgaggaggca 180
 gcgggcggtg cgccgcaagc cgatacgca gacgcaaccg ccggagaagg cagccaagat 240
 atggcggcag tttcggcaga aaatacaggc aatggcggtg cggcaacaac ggacaacccc 300
 aaaaatgaag acgcgggggc gcaaaatgat atgccgcaaa atgccgccga atccgcaa 360
 caaacaggga acaaccaacc cgccggttct tcagattccg ccccgcgtc aaaccctgcc 420
 cctgcgaatg gcggtagcga ttttggaagg acgaacgtgg gcaattctgt tgtgattgac 480
 ggaccgtcgc aaaatataac gttgaccac tgtaaaggcg attcttgtaa tggtgataat 540
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 attaagcgat ataaaaaaga cgagcaacgg gagaattttg tcggtttggt tgctgacagg 660

 gtaaaaaagg atggaactaa caaatatatc atcttctata cggacaaaacc acctactcgt 720
 tctgcacggt cgaggaggtc gcttcgggcc gagattccgc tgattccgt caatcaggcc 780
 gatacgctga ttgtggatg ggaagcggtc agcctgacgg ggcattccg caatatcttc 840
 gcgcccgaag ggaattaccg gtatctgact tacggggcgg aaaaattgcc cggcggtatg 900
 tatgccctcc gtgtgcaagg cgaaccggca aaaggcgaaa tgcttgttg caggccgtg 960
 tacaacggcg aagtgtctga tttccatatg gaaaacggcc gtccgtaccc gtccggaggc 1020
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 gatgatttgc atatgggtac gcaaaaattc aaagccgcca tcgatggaaa cggctttaag 1140
 gggacttgga cggaaaatgg cggcggggat gttccggaa ggttttacgg cccggccggc 1200
 gaggaagtgg cgggaaaata cagctatcgc ccgacagatg ctgaaaagg cggattcggc 1260
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<210> 3106
 <211> 429
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 3106
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 20 25 30
 Thr Pro Ser Lys Pro Ala Ala Pro Val Val Ala Glu Asn Ala Gly Glu
 35 40 45
 Gly Val Leu Pro Lys Glu Lys Lys Asp Glu Glu Ala Ala Gly Gly Ala
 50 55 60
 Pro Gln Ala Asp Thr Gln Asp Ala Thr Ala Gly Glu Gly Ser Gln Asp
 65 70 75 80
 Met Ala Ala Val Ser Ala Glu Asn Thr Gly Asn Gly Gly Ala Ala Thr
 85 90 95
 Thr Asp Asn Pro Lys Asn Glu Asp Ala Gly Ala Gln Asn Asp Met Pro

100					105					110					
Gln	Asn	Ala	Ala	Glu	Ser	Ala	Asn	Gln	Thr	Gly	Asn	Asn	Gln	Pro	Ala
		115					120					125			
Gly	Ser	Ser	Asp	Ser	Ala	Pro	Ala	Ser	Asn	Pro	Ala	Pro	Ala	Asn	Gly
	130					135					140				
Gly	Ser	Asp	Phe	Gly	Arg	Thr	Asn	Val	Gly	Asn	Ser	Val	Val	Ile	Asp
145					150					155					160
Gly	Pro	Ser	Gln	Asn	Ile	Thr	Leu	Thr	His	Cys	Lys	Gly	Asp	Ser	Cys
				165					170					175	
Asn	Gly	Asp	Asn	Leu	Leu	Asp	Glu	Glu	Ala	Pro	Ser	Lys	Ser	Glu	Phe
			180					185					190		
Glu	Lys	Leu	Ser	Asp	Glu	Glu	Lys	Ile	Lys	Arg	Tyr	Lys	Lys	Asp	Glu
	195						200					205			
Gln	Arg	Glu	Asn	Phe	Val	Gly	Leu	Val	Ala	Asp	Arg	Val	Lys	Lys	Asp
	210					215					220				
Gly	Thr	Asn	Lys	Tyr	Ile	Ile	Phe	Tyr	Thr	Asp	Lys	Pro	Pro	Thr	Arg
225					230					235					240
Ser	Ala	Arg	Ser	Arg	Arg	Ser	Leu	Pro	Ala	Glu	Ile	Pro	Leu	Ile	Pro
				245					250					255	
Val	Asn	Gln	Ala	Asp	Thr	Leu	Ile	Val	Asp	Gly	Glu	Ala	Val	Ser	Leu
			260					265					270		
Thr	Gly	His	Ser	Gly	Asn	Ile	Phe	Ala	Pro	Glu	Gly	Asn	Tyr	Arg	Tyr
		275					280					285			
Leu	Thr	Tyr	Gly	Ala	Glu	Lys	Leu	Pro	Gly	Gly	Ser	Tyr	Ala	Leu	Arg
	290					295					300				
Val	Gln	Gly	Glu	Pro	Ala	Lys	Gly	Glu	Met	Leu	Val	Gly	Thr	Ala	Val
305					310					315					320
Tyr	Asn	Gly	Glu	Val	Leu	His	Phe	His	Met	Glu	Asn	Gly	Arg	Pro	Tyr
				325					330					335	
Pro	Ser	Gly	Gly	Arg	Phe	Ala	Ala	Lys	Val	Asp	Phe	Gly	Ser	Lys	Ser
				340				345					350		
Val	Asp	Gly	Ile	Ile	Asp	Ser	Gly	Asp	Asp	Leu	His	Met	Gly	Thr	Gln
		355					360					365			
Lys	Phe	Lys	Ala	Ala	Ile	Asp	Gly	Asn	Gly	Phe	Lys	Gly	Thr	Trp	Thr
	370					375					380				
Glu	Asn	Gly	Gly	Gly	Asp	Val	Ser	Gly	Arg	Phe	Tyr	Gly	Pro	Ala	Gly
385					390					395					400
Glu	Glu	Val	Ala	Gly	Lys	Tyr	Ser	Tyr	Arg	Pro	Thr	Asp	Ala	Glu	Lys

405

410

415

Gly Gly Phe Gly Val Phe Ala Gly Lys Lys Asp Arg Asp
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<210> 3107

<211> 1494

<212> DNA

<213> *Neisseria meningitidis*

<400> 3107

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gttgttactg aagatgtcgg ggaagaggtg ctgccgaaag aaaagaaaga tgaggaggcg 180
gtgagtgttg cgccgcaagc cgatacgcag gacgcaaccg ccgaaaagg cggtaagat 240
atggcggcag ttccggcaga aaatacaggc aatggcggtg cggcaacaac ggataatccc 300
gaaaataaag acgagggacc gcaaatgat atgccgcaaa atgccgccga tacagatagt 360
tcgacaccga atcacacccc tgcaaccgaat atgccaacca gagatatggg aaaccaagca 420
ccgatgccc ggaatcggc acaaccggca aaccaaccgg atatggcaaa tcggcgggac 480
ggaatgcagg gggacgatcc gtcggcaggg gaaaatgccg gcaatacggc agatcaagct 540
gcaaatcaag ctgaaaacaa tcaagtccgc ggctctcaaa atcctgcctc ttcaaccaat 600
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cttgacagcg gttcggaaaa tgtaacgttg acacattgta aagacaaagt atgcgataga 720
gatttcttag atgaagaagc accaccaaaa tcagaatttg aaaaattaag tgatgaagaa 780
aaaattaata aatataaaaa agacgagcaa cgagagaatt ttgtcggttt gggtgctgac 840
agggtagaaa agaattggaac taacaaatat gtcatcattt ataaagacaa gtccgcttca 900
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gcggaaaaat tgtccggcgg atcgtatgcc ctcagtgtgc aaggcgaacc ggcaaaaggc 1140
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ggccgtccgt ccccgccgg aggcaggttt gccgcaaaag tcgatttcgg cagcaaatct 1260
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gttatcgatg gaaacggctt taaggggact tggacggaaa atggcggcgg ggatgtttcc 1380
ggaagggtttt acggcccggc cggcgaagaa gtggcgggaa aatacagcta tcgcccgaca 1440
gatgcggaaa agggcggatt cggcgtgttt gccggcaaaa aagagcagga ttga 1494

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<210> 3108

<211> 497

<212> PRT

<213> *Neisseria meningitidis*

<400> 3108

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Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Val Ala Leu Ser
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Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
      20             25            30

Thr Leu Ser Lys Pro Ala Ala Pro Val Val Thr Glu Asp Val Gly Glu
      35             40            45

Glu Val Leu Pro Lys Glu Lys Lys Asp Glu Glu Ala Val Ser Gly Ala
      50             55            60

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Pro	Gln	Ala	Asp	Thr	Gln	Asp	Ala	Thr	Ala	Gly	Lys	Gly	Gly	Gln	Asp	
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Met	Ala	Ala	Val	Ser	Ala	Glu	Asn	Thr	Gly	Asn	Gly	Gly	Ala	Ala	Thr	
			85						90					95		
Thr	Asp	Asn	Pro	Glu	Asn	Lys	Asp	Glu	Gly	Pro	Gln	Asn	Asp	Met	Pro	
			100					105					110			
Gln	Asn	Ala	Ala	Asp	Thr	Asp	Ser	Ser	Thr	Pro	Asn	His	Thr	Pro	Ala	
		115					120					125				
Pro	Asn	Met	Pro	Thr	Arg	Asp	Met	Gly	Asn	Gln	Ala	Pro	Asp	Ala	Gly	
		130				135					140					
Glu	Ser	Ala	Gln	Pro	Ala	Asn	Gln	Pro	Asp	Met	Ala	Asn	Ala	Ala	Asp	
145					150					155					160	
Gly	Met	Gln	Gly	Asp	Asp	Pro	Ser	Ala	Gly	Glu	Asn	Ala	Gly	Asn	Thr	
				165					170					175		
Ala	Asp	Gln	Ala	Ala	Asn	Gln	Ala	Glu	Asn	Asn	Gln	Val	Gly	Gly	Ser	
		180						185					190			
Gln	Asn	Pro	Ala	Ser	Ser	Thr	Asn	Pro	Asn	Ala	Thr	Asn	Gly	Gly	Ser	
		195					200					205				
Asp	Phe	Gly	Arg	Ile	Asn	Val	Ala	Asn	Gly	Ile	Lys	Leu	Asp	Ser	Gly	
	210				215						220					
Ser	Glu	Asn	Val	Thr	Leu	Thr	His	Cys	Lys	Asp	Lys	Val	Cys	Asp	Arg	
225					230					235					240	
Asp	Phe	Leu	Asp	Glu	Glu	Ala	Pro	Pro	Lys	Ser	Glu	Phe	Glu	Lys	Leu	
				245					250					255		
Ser	Asp	Glu	Glu	Lys	Ile	Asn	Lys	Tyr	Lys	Lys	Asp	Glu	Gln	Arg	Glu	
		260					265						270			
Asn	Phe	Val	Gly	Leu	Val	Ala	Asp	Arg	Val	Glu	Lys	Asn	Gly	Thr	Asn	
		275					280					285				
Lys	Tyr	Val	Ile	Ile	Tyr	Lys	Asp	Lys	Ser	Ala	Ser	Ser	Ser	Ser	Ala	
	290					295					300					
Arg	Phe	Arg	Arg	Ser	Ala	Arg	Ser	Arg	Arg	Ser	Leu	Pro	Ala	Glu	Met	
305					310					315					320	
Pro	Leu	Ile	Pro	Val	Asn	Gln	Ala	Asp	Thr	Leu	Ile	Val	Asp	Gly	Glu	
				325					330					335		
Ala	Val	Ser	Leu	Thr	Gly	His	Ser	Gly	Asn	Ile	Phe	Ala	Pro	Glu	Gly	
			340					345					350			
Asn	Tyr	Arg	Tyr	Leu	Thr	Tyr	Gly	Ala	Glu	Lys	Leu	Ser	Gly	Gly	Ser	
		355					360					365				

Tyr Ala Leu Ser Val Gln Gly Glu Pro Ala Lys Gly Glu Met Leu Ala
 370 375 380
 Gly Thr Ala Val Tyr Asn Gly Glu Val Leu His Phe His Met Glu Asn
 385 390 395 400
 Gly Arg Pro Ser Pro Ser Gly Gly Arg Phe Ala Ala Lys Val Asp Phe
 405 410 415
 Gly Ser Lys Ser Val Asp Gly Ile Ile Asp Ser Gly Asp Asp Leu His
 420 425 430
 Met Gly Thr Gln Lys Phe Lys Ala Val Ile Asp Gly Asn Gly Phe Lys
 435 440 445
 Gly Thr Trp Thr Glu Asn Gly Gly Gly Asp Val Ser Gly Arg Phe Tyr
 450 455 460
 Gly Pro Ala Gly Glu Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr
 465 470 475 480
 Asp Ala Glu Lys Gly Gly Phe Gly Val Phe Ala Gly Lys Lys Glu Gln
 485 490 495

Asp

<210> 3109
 <211> 963
 <212> DNA
 <213> Neisseria meningitidis

<400> 3109
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 gtggccgctt ctgccagagc tgccgttaaa gacatggatt tacaggcatt acacggacga 180
 aaagttagcat tgtacattgc cactatgggc gaccaagggt caggcagttt gacagggggg 240
 cgctactcca ttgatgcact gattcgtggc gaatacataa acagccctgc cgtccgtacc 300
 gattacacct atccacgtta cgaaaccacc gctgaaacaa catcaggcgg tttgacagg 360
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 agcggaagta aaagcagtct gggcttaaat attggcgga tgggggatta tcgaaatgaa 480
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<210> 3110
 <211> 320
 <212> PRT
 <213> Neisseria meningitidis

<400> 3110

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			20					25					30		
Arg	Phe	Ala	Val	Glu	Gln	Glu	Leu	Val	Ala	Ala	Ser	Ala	Arg	Ala	Ala
		35					40					45			
Val	Lys	Asp	Met	Asp	Leu	Gln	Ala	Leu	His	Gly	Arg	Lys	Val	Ala	Leu
	50					55					60				
Tyr	Ile	Ala	Thr	Met	Gly	Asp	Gln	Gly	Ser	Gly	Ser	Leu	Thr	Gly	Gly
65					70					75					80
Arg	Tyr	Ser	Ile	Asp	Ala	Leu	Ile	Arg	Gly	Glu	Tyr	Ile	Asn	Ser	Pro
				85					90					95	
Ala	Val	Arg	Thr	Asp	Tyr	Thr	Tyr	Pro	Arg	Tyr	Glu	Thr	Thr	Ala	Glu
			100					105					110		
Thr	Thr	Ser	Gly	Gly	Leu	Thr	Gly	Leu	Thr	Thr	Ser	Leu	Ser	Thr	Leu
		115					120					125			
Asn	Ala	Pro	Ala	Leu	Ser	Arg	Thr	Gln	Ser	Asp	Gly	Ser	Gly	Ser	Lys
130						135					140				
Ser	Ser	Leu	Gly	Leu	Asn	Ile	Gly	Gly	Met	Gly	Asp	Tyr	Arg	Asn	Glu
145					150					155					160
Thr	Leu	Thr	Thr	Asn	Pro	Arg	Asp	Thr	Ala	Phe	Leu	Ser	His	Leu	Val
				165					170					175	
Gln	Thr	Val	Phe	Phe	Leu	Arg	Gly	Ile	Asp	Val	Val	Ser	Pro	Ala	Asn
			180					185					190		
Ala	Asp	Thr	Asp	Val	Phe	Ile	Asn	Ile	Asp	Val	Phe	Gly	Thr	Ile	Arg
		195					200					205			
Asn	Arg	Thr	Glu	Met	His	Leu	Tyr	Asn	Ala	Glu	Thr	Leu	Lys	Ala	Gln
210						215					220				
Thr	Lys	Leu	Glu	Tyr	Phe	Ala	Val	Asp	Arg	Thr	Asn	Lys	Lys	Leu	Leu
225					230					235					240
Ile	Lys	Pro	Lys	Thr	Asn	Ala	Phe	Glu	Ala	Ala	Tyr	Lys	Glu	Asn	Tyr
				245					250					255	
Ala	Leu	Trp	Met	Gly	Pro	Tyr	Lys	Val	Ser	Lys	Gly	Ile	Lys	Pro	Thr
		260						265					270		
Glu	Gly	Leu	Met	Val	Asp	Phe	Ser	Asp	Ile	Arg	Pro	Tyr	Gly	Asn	His
		275						280					285		
Thr	Gly	Asn	Ser	Ala	Pro	Ser	Val	Glu	Ala	Asp	Asn	Ser	His	Glu	Gly

290

295

300

Tyr Gly Tyr Ser Asp Glu Val Val Arg Gln His Arg Gln Gly Gln Pro
 305 310 315 320

<210> 3111

<211> 963

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 3111

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gtggccgctt ctgccagagc tgccgttaaa gacatggatt tacaggcatt acacggacga 180
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cgctactcca ttgatgcaact gattcgcggc gaatacataa acagccctgc cgtccgcacc 300
gattacacct atccgcgtta cgaaaccacc gctgaaacaa catcaggcgg tttgacgggt 360
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ttctgcgcg gcatagacgt tgtttctcct gccaatgccg atacagatgt gtttattaac 600
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ctgaaagccc aaacaaaact ggaatatttc gcagtagaca gaaccaataa aaaattgctc 720
atcaaaccga aaaccaatgc gtttgaagct gcctataaag aaaattacgc attgtggatg 780
gggccgtata agtaagcaa aggaatcaaa ccgacggaag gattgatggt cgatttctcc 840
gatatccaac catacggcaa tcatacgggt aactccgccc catccgtaga ggctgataac 900
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<210> 3112

<211> 320

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 3112

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Arg Phe Ala Val Glu Gln Glu Leu Val Ala Ala Ser Ala Arg Ala Ala
 35 40 45

Val Lys Asp Met Asp Leu Gln Ala Leu His Gly Arg Lys Val Ala Leu
 50 55 60

Tyr Ile Ala Thr Met Gly Asp Gln Gly Ser Gly Ser Leu Thr Gly Gly
 65 70 75 80

Arg Tyr Ser Ile Asp Ala Leu Ile Arg Gly Glu Tyr Ile Asn Ser Pro


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aaagttgcat tgtacattgc aactatgggc gaccaaggtt caggcagttt gacaggggggt 240
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gattacacct atccacgtta cgaaaccacc gctgaaacaa catcaggcgg tttgacaggt 360
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accttgacga ctaaccgcgc cgacactgcc tttctttccc acttggtaca gaccgtattt 540
ttcctgcgcg gcatagacgt tgtttctcct gccaatgccg atacggatgt gtttattaac 600
atcgacgtat tcggaacgat acgcaacaga accgaaatgc acctatacaa tgccgaaaca 660
ctgaaagccc aaacaaaact ggaatatttc gcagtagaca gaaccaataa aaaattgctc 720
atcaaaccac aaaccaatgc gtttgaagct gcctataaag aaaattacgc attgtggatg 780
ggaccgtata aagtaagcaa aggaattaaa ccgacagaag gattaatggc cgatttctcc 840
gatatccaac catacggcaa tcatatgggt aactctgccc catccgtaga ggctgataac 900
agtcattgagg ggtatggata cagcgatgaa gcagtgcgac gacatagaca agggcaacct 960
tga
963

```

<210> 3114

<211> 320

<212> PRT

<213> Neisseria meningitidis

<400> 3114

```

Met Gln Ala Arg Leu Leu Ile Pro Ile Leu Phe Ser Val Phe Ile Leu
  1               5               10              15

```

```

Ser Ala Cys Gly Thr Leu Thr Gly Ile Pro Ser His Gly Gly Gly Lys
                20              25              30

```

```

Arg Phe Ala Val Glu Gln Glu Leu Val Ala Ala Ser Ala Arg Ala Ala
  35              40              45

```

```

Val Lys Asp Met Asp Leu Gln Ala Leu His Gly Arg Lys Val Ala Leu
  50              55              60

```

```

Tyr Ile Ala Thr Met Gly Asp Gln Gly Ser Gly Ser Leu Thr Gly Gly
  65              70              75              80

```

```

Arg Tyr Ser Ile Asp Ala Leu Ile Arg Gly Glu Tyr Ile Asn Ser Pro
  85              90              95

```

```

Ala Val Arg Thr Asp Tyr Thr Tyr Pro Arg Tyr Glu Thr Thr Ala Glu
  100             105             110

```

```

Thr Thr Ser Gly Gly Leu Thr Gly Leu Thr Thr Ser Leu Ser Thr Leu
  115             120             125

```

```

Asn Ala Pro Ala Leu Ser Arg Thr Gln Ser Asp Gly Ser Gly Ser Lys
  130             135             140

```

```

Ser Ser Leu Gly Leu Asn Ile Gly Gly Met Gly Asp Tyr Arg Asn Glu
  145             150             155             160

```

```

Thr Leu Thr Thr Asn Pro Arg Asp Thr Ala Phe Leu Ser His Leu Val
  165             170             175

```

```

Gln Thr Val Phe Phe Leu Arg Gly Ile Asp Val Val Ser Pro Ala Asn
  180             185             190

```

Ala Asp Thr Asp Val Phe Ile Asn Ile Asp Val Phe Gly Thr Ile Arg
 195 200 205
 Asn Arg Thr Glu Met His Leu Tyr Asn Ala Glu Thr Leu Lys Ala Gln
 210 215 220
 Thr Lys Leu Glu Tyr Phe Ala Val Asp Arg Thr Asn Lys Lys Leu Leu
 225 230 235 240
 Ile Lys Pro Lys Thr Asn Ala Phe Glu Ala Ala Tyr Lys Glu Asn Tyr
 245 250 255
 Ala Leu Trp Met Gly Pro Tyr Lys Val Ser Lys Gly Ile Lys Pro Thr
 260 265 270
 Glu Gly Leu Met Val Asp Phe Ser Asp Ile Gln Pro Tyr Gly Asn His
 275 280 285
 Met Gly Asn Ser Ala Pro Ser Val Glu Ala Asp Asn Ser His Glu Gly
 290 295 300
 Tyr Gly Tyr Ser Asp Glu Ala Val Arg Arg His Arg Gln Gly Gln Pro
 305 310 315 320

<210> 3115
 <211> 222
 <212> PRT
 <213> Neisseria meningitidis

<400> 3115
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Val Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Ser Ala Met Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser
 100 105 110
 Val Ser Thr Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys

115	120	125
Arg Ala Met Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg		
130	135	140
Met Gly Ala Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val		
145	150	155
Phe Phe Arg Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr		
	165	170
		175
Ile Gly Asn Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile		
	180	185
		190
Glu Ile Thr Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe		
	195	200
		205
Ala Arg Arg Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn		
210	215	220

<210> 3116

<211> 280

<212> PRT

<213> Neisseria meningitidis

<400> 3116

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met			
1	5	10	15
Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser			
	20	25	30
Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val			
	35	40	45
Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu			
	50	55	60
Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val			
	65	70	75
			80
Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly			
	85	90	95
Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Val			
	100	105	110
Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met			
	115	120	125
Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg			
	130	135	140
Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu			
145	150	155	160

Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr Gly Phe Asp
165 170 175

Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met Gly Ile Asn
180 185 190

Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr Pro Val Ala
195 200 205

Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg Thr Leu Gly
210 215 220

Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn Asn Arg Phe
225 230 235 240

Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr Ser Leu Ser
245 250 255

His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg Val Lys Lys
260 265 270

Asn Asp Pro Ser Arg Phe Leu Asn
275 280

<210> 3117

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3117

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
130 135 140

Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220

Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
225 230 235 240

Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 3118

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3118

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
130 135 140

Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met

145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3119
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3119
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Leu Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3120
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3120
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3121
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3121
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg

	180		185		190										
Thr	Leu	Gly	Gly	Ser	Arg	Ile	Ser	His	Val	Gly	Leu	Tyr	Ile	Gly	Asn
	195						200					205			
Asn	Arg	Phe	Ile	His	Ala	Pro	Arg	Thr	Gly	Lys	Asn	Ile	Glu	Ile	Thr
	210					215					220				
Ser	Leu	Ser	His	Lys	Tyr	Trp	Ser	Gly	Lys	Tyr	Ala	Phe	Ala	Arg	Arg
225					230					235					240
Val	Lys	Lys	Asn	Asp	Pro	Ser	Arg	Phe	Leu	Asn					
			245						250						

<210> 3122
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3122

Met	Asp	Ser	Phe	Phe	Lys	Pro	Ala	Val	Trp	Ala	Val	Leu	Trp	Leu	Met
1				5					10					15	
Phe	Ala	Val	Arg	Pro	Ala	Leu	Ala	Asp	Glu	Leu	Thr	Asn	Leu	Leu	Ser
		20						25					30		
Ser	Arg	Glu	Gln	Ile	Leu	Arg	Gln	Phe	Ala	Glu	Asp	Glu	Gln	Pro	Val
		35					40					45			
Leu	Pro	Ile	Asn	Arg	Ala	Pro	Ala	Arg	Arg	Ala	Gly	Asn	Ala	Asp	Glu
	50					55					60				
Leu	Ile	Gly	Ser	Ala	Met	Gly	Leu	Asn	Glu	Gln	Pro	Val	Leu	Pro	Val
65					70					75					80
Asn	Arg	Val	Pro	Ala	Arg	Arg	Ala	Gly	Asn	Ala	Asp	Glu	Leu	Ile	Gly
				85					90					95	
Asn	Ala	Met	Gly	Leu	Asn	Glu	Gln	Pro	Val	Leu	Pro	Val	Asn	Arg	Ala
		100						105					110		
Pro	Ala	Arg	Arg	Ala	Gly	Asn	Ala	Asp	Glu	Leu	Ile	Gly	Asn	Ala	Met
	115						120					125			
Gly	Leu	Leu	Gly	Ile	Ala	Tyr	Arg	Tyr	Gly	Gly	Thr	Ser	Val	Ser	Thr
	130					135					140				
Gly	Phe	Asp	Cys	Ser	Gly	Phe	Met	Gln	His	Ile	Phe	Lys	Arg	Ala	Met
145					150					155					160
Gly	Ile	Asn	Leu	Pro	Arg	Thr	Ser	Ala	Glu	Gln	Ala	Arg	Met	Gly	Thr
				165					170					175	
Pro	Val	Ala	Arg	Ser	Glu	Leu	Gln	Pro	Gly	Asp	Met	Val	Phe	Phe	Arg
		180						185						190	

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220

Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
225 230 235 240

Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 3123

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3123

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
130 135 140

Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220

Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
225 230 235 240

Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 3124

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3124

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95

Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
130 135 140

Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr

210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240

Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3125
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3125
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
 130 135 140

Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220

Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240

Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3126

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3126

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140

Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220

Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg

225	230	235	240
Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn			
	245	250	
.			
<210> 3127			
<211> 280			
<212> PRT			
<213> Neisseria meningitidis			
<400> 3127			
Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met			
1	5	10	15
Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser			
	20	25	30
Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val			
	35	40	45
Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu			
	50	55	60
Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val			
	65	70	75
Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly			
	85	90	95
Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala			
	100	105	110
Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met			
	115	120	125
Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg			
	130	135	140
Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu			
	145	150	155
Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr Gly Phe Asp			
	165	170	175
Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met Gly Ile Asn			
	180	185	190
Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr Pro Val Ala			
	195	200	205
Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg Thr Leu Gly			
	210	215	220
Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn Asn Arg Phe			
225	230	235	240

Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr Ser Leu Ser
245 250 255

His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg Val Lys Lys
260 265 270

Asn Asp Pro Ser Arg Phe Leu Asn
275 280

<210> 3128

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3128

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
130 135 140

Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220

Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
225 230 235 240

Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 3129

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3129

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Val Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
130 135 140

Gly Phe Asp Cys Ser Gly Phe Ile Gln His Ile Phe Lys Arg Ala Met
145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220

Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg

225		230		235		240
Val	Lys	Lys	Asn	Asp	Pro	Ser
			245			
				250		
<p><210> 3130</p> <p><211> 251</p> <p><212> PRT</p> <p><213> Neisseria meningitidis</p>						
<p><400> 3130</p>						
Met	Asp	Ser	Phe	Phe	Lys	Pro
1				5		
						10
						15
Phe	Ala	Val	Arg	Pro	Ala	Leu
			20			
						25
						30
Ser	Arg	Glu	Gln	Ile	Leu	Arg
						35
						40
						45
Leu	Pro	Ile	Asn	Arg	Ala	Pro
						50
						55
						60
Leu	Ile	Gly	Ser	Ala	Met	Gly
						65
						70
						75
Asn	Arg	Val	Pro	Ala	Arg	Arg
						80
						85
						90
						95
Asn	Ala	Met	Gly	Leu	Asn	Glu
						100
						105
						110
Pro	Ala	Arg	Arg	Ala	Gly	Asn
						115
						120
						125
Gly	Leu	Leu	Gly	Ile	Ala	Tyr
						130
						135
						140
Gly	Phe	Asp	Cys	Ser	Gly	Phe
						145
						150
						155
						160
Gly	Ile	Asn	Leu	Pro	Arg	Thr
						165
						170
						175
Pro	Val	Ala	Arg	Ser	Glu	Leu
						180
						185
						190
Thr	Leu	Gly	Gly	Ser	Arg	Ile
						195
						200
						205
Asn	Arg	Phe	Ile	His	Ala	Pro
						210
						215
						220
Ser	Leu	Ser	His	Lys	Tyr	Trp
						225
						230
						235
						240

Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 3131
<211> 222
<212> PRT
<213> *Neisseria meningitidis*

<400> 3131
Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15
Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30
Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45
Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60
Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80
Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95
Asn Ala Met Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser
100 105 110
Val Ser Thr Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys
115 120 125
Arg Ala Met Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg
130 135 140
Met Gly Thr Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val
145 150 155 160
Phe Phe Arg Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr
165 170 175
Ile Gly Asn Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile
180 185 190
Glu Ile Thr Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe
195 200 205
Ala Arg Arg Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
210 215 220

<210> 3132
<211> 251
<212> PRT
<213> *Neisseria meningitidis*

<400> 3132

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15
Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30
Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45
Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60
Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80
Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95
Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110
Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125
Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
130 135 140
Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
145 150 155 160
Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175
Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190
Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205
Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220
Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
225 230 235 240
Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 3133

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3133

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3134
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3134
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3135

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3135

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser

20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3136

<211> 280

<212> PRT

<213> Neisseria meningitidis

<400> 3136

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Ile
 65 70 75 80
 Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Val
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg
 130 135 140
 Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu
 145 150 155 160
 Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr Gly Phe Asp
 165 170 175
 Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met Gly Ile Asn
 180 185 190
 Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr Pro Val Ala
 195 200 205
 Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg Thr Leu Gly
 210 215 220
 Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn Asn Arg Phe
 225 230 235 240
 Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr Ser Leu Ser
 245 250 255
 His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg Val Lys Lys
 260 265 270
 Asn Asp Pro Ser Arg Phe Leu Asn
 275 280

<210> 3137

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3137

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met

1	5	10	15
Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser	20	25	30
Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val	35	40	45
Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu	50	55	60
Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val	65	70	75
Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly	85	90	95
Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala	100	105	110
Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met	115	120	125
Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr	130	135	140
Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met	145	150	155
Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr	165	170	175
Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg	180	185	190
Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn	195	200	205
Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr	210	215	220
Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg	225	230	235
Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn	245	250	

<210> 3138

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3138

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met	1	5	10	15
---	---	---	----	----

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30
Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45
Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60
Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80
Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95
Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110
Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125
Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
130 135 140
Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
145 150 155 160
Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175
Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190
Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205
Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220
Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
225 230 235 240
Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 3139

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3139

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
130 135 140

Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
145 150 155 160

Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175

Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190

Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205

Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220

Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
225 230 235 240

Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 3140

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3140

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val

35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3141
 <211> 251
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3141
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3142

<211> 251

<212> PRT

<213> Neisseria meningitidis

<400> 3142

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu

50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3143
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3143
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3144

<211> 251

<212> PRT

<213> *Neisseria meningitidis*

<400> 3144

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80

Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3145
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3145
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly

Ser Ala Met Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser
 100 105 110
 Val Ser Thr Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys
 115 120 125
 Arg Ala Met Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg
 130 135 140
 Met Gly Ala Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val
 145 150 155 160
 Phe Phe Arg Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr
 165 170 175
 Ile Gly Asn Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile
 180 185 190
 Glu Ile Thr Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe
 195 200 205
 Ala Arg Arg Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 210 215 220

<210> 3147

<211> 222

<212> PRT

<213> Neisseria meningitidis

<400> 3147

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Ser Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Val Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Ser Ala Met Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser
 100 105 110
 Val Ser Thr Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys
 115 120 125
 Arg Ala Met Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg
 130 135 140

Met Gly Ala Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val
 145 150 155 160
 Phe Phe Arg Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr
 165 170 175
 Ile Gly Asn Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile
 180 185 190
 Glu Ile Thr Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe
 195 200 205
 Ala Arg Arg Ile Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 210 215 220

<210> 3148
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 3148
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg

180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 3149
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3149
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Arg Lys Ala Pro Asp Leu Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Met Leu Ala Ser Thr Ala Ala Pro Ile
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Glu Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190

Asn Leu Leu Ser Pro Tyr Ser Arg Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3150

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3150

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Glu Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Asn Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3151

<211> 215
<212> PRT
<213> Neisseria meningitidis

<400> 3151

```
Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1           5           10           15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
      20           25           30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
      35           40           45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
      50           55           60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
      65           70           75           80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
      85           90           95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
      100          105          110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
      115          120          125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
      130          135          140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
      145          150          155          160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
      165          170          175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
      180          185          190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
      195          200          205

Phe Val Glu Glu Gln Pro Lys
      210          215
```

<210> 3152
<211> 215
<212> PRT
<213> Neisseria meningitidis

<400> 3152

```
Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1           5           10           15
```

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3153

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3153

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3154
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3154
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Glu Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile

100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Asn Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3155
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3155
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3156

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3156

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Glu Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Asn Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3157

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3157

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Ala Leu Val Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Met Leu Ala Ser Thr Ala Glu Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Gln
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Ile Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Arg Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Val
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3158
<211> 215
<212> PRT
<213> Neisseria meningitidis

<400> 3158
Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15
Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30
Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45
Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60
Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80
Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95
Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110
Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125
Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140
Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160
Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175
Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190
Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205
Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3159
<211> 215
<212> PRT
<213> Neisseria meningitidis

<400> 3159
Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3160

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3160

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu

50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3161
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3161
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3162
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3162
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3163

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3163

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr

180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

 <210> 3164
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

 <400> 3164
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3165
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3165
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3166
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3166
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala

1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3167

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3167

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3168
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3168
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3169

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3169

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu

130		135		140
Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn				
145		150		155 160
Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala				
	165		170	175
Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr				
	180		185	190
Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg				
	195		200	205
Phe Val Glu Glu Gln Pro Lys				
	210		215	

<210> 3170
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3170

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala				
1		5		10 15
Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu				
	20		25	30
Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro				
	35		40	45
Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu				
	50		55	60
Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr				
	65		70	75 80
Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg				
	85		90	95
Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile				
	100		105	110
Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr				
	115		120	125
Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu				
	130		135	140
Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn				
145		150		155 160
Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala				
	165		170	175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3171

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3171

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Met Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3172
 <211> 215
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3172
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3173
 <211> 215
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3173

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 3174

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3174

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3175

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3175

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ala Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Met Leu Ala Ser Thr Ala Glu Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg

	85	90	95
Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile			
	100	105	110
Thr Ile Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr			
	115	120	125
Thr Val Ser Ala Arg Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Val			
	130	135	140
Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn			
	145	150	155
Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala			
	165	170	175
Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Ala Ala Ala Tyr			
	180	185	190
Asp Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg			
	195	200	205
Phe Val Glu Glu Gln Pro Lys			
	210	215	

<210> 3176
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 3176

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala			
1	5	10	15
Cys Gln Val Arg Lys Ala Pro Asp Leu Asp Tyr Thr Ser Phe Lys Glu			
	20	25	30
Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro			
	35	40	45
Asp Val Asn Gly Thr Trp Gly Met Leu Ala Ser Thr Ala Ala Pro Ile			
	50	55	60
Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr			
	65	70	75
Phe Lys Glu Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg			
	85	90	95
Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile			
	100	105	110
Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr			
	115	120	125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser Arg Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3177

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3177

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Arg Lys Ala Pro Asp Leu Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Met Leu Ala Ser Thr Ala Ala Pro Ile
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Glu Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser Arg Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 3178

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 3178

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys

210

215

<210> 3179

<211> 492

<212> PRT

<213> *Neisseria meningitidis*

<400> 3179

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Ala Leu Ser
 1 5 10 15

Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
 20 25 30

Thr Leu Ser Lys Pro Ala Ala Pro Val Val Ser Glu Lys Glu Thr Glu
 35 40 45

Ala Lys Glu Asp Ala Pro Gln Ala Gly Ser Gln Gly Gln Gly Ala Pro
 50 55 60

Ser Ala Gln Gly Gly Gln Asp Met Ala Ala Val Ser Glu Glu Asn Thr
 65 70 75 80

Gly Asn Gly Gly Ala Ala Ala Thr Asp Lys Pro Lys Asn Glu Asp Glu
 85 90 95

Gly Ala Gln Asn Asp Met Pro Gln Asn Ala Ala Asp Thr Asp Ser Leu
 100 105 110

Thr Pro Asn His Thr Pro Ala Ser Asn Met Pro Ala Gly Asn Met Glu
 115 120 125

Asn Gln Ala Pro Asp Ala Gly Glu Ser Glu Gln Pro Ala Asn Gln Pro
 130 135 140

Asp Met Ala Asn Thr Ala Asp Gly Met Gln Gly Asp Asp Pro Ser Ala
 145 150 155 160

Gly Gly Glu Asn Ala Gly Asn Thr Ala Ala Gln Gly Thr Asn Gln Ala
 165 170 175

Glu Asn Asn Gln Thr Ala Gly Ser Gln Asn Pro Ala Ser Ser Thr Asn
 180 185 190

Pro Ser Ala Thr Asn Ser Gly Gly Asp Phe Gly Arg Thr Asn Val Gly
 195 200 205

Asn Ser Val Val Ile Asp Gly Pro Ser Gln Asn Ile Thr Leu Thr His
 210 215 220

Cys Lys Gly Asp Ser Cys Ser Gly Asn Asn Phe Leu Asp Glu Glu Val
 225 230 235 240

Gln Leu Lys Ser Glu Phe Glu Lys Leu Ser Asp Ala Asp Lys Ile Ser
 245 250 255

Asn Tyr Lys Lys Asp Gly Lys Asn Asp Gly Lys Asn Asp Lys Phe Val
 260 265 270
 Gly Leu Val Ala Asp Ser Val Gln Met Lys Gly Ile Asn Gln Tyr Ile
 275 280 285
 Ile Phe Tyr Lys Pro Lys Pro Thr Ser Phe Ala Arg Phe Arg Arg Ser
 290 295 300
 Ala Arg Ser Arg Arg Ser Leu Pro Ala Glu Met Pro Leu Ile Pro Val
 305 310 315 320
 Asn Gln Ala Asp Thr Leu Ile Val Asp Gly Glu Ala Val Ser Leu Thr
 325 330 335
 Gly His Ser Gly Asn Ile Phe Ala Pro Glu Gly Asn Tyr Arg Tyr Leu
 340 345 350
 Thr Tyr Gly Ala Glu Lys Leu Pro Gly Gly Ser Tyr Ala Leu Arg Val
 355 360 365
 Gln Gly Glu Pro Ser Lys Gly Glu Met Leu Ala Gly Thr Ala Val Tyr
 370 375 380
 Asn Gly Glu Val Leu His Phe His Thr Glu Asn Gly Arg Pro Ser Pro
 385 390 395 400
 Ser Arg Gly Arg Phe Ala Ala Lys Val Asp Phe Gly Ser Lys Ser Val
 405 410 415
 Asp Gly Ile Ile Asp Ser Gly Asp Gly Leu His Met Gly Thr Gln Lys
 420 425 430
 Phe Lys Ala Ala Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr Glu
 435 440 445
 Asn Gly Gly Gly Asp Val Ser Gly Lys Phe Tyr Gly Pro Ala Gly Glu
 450 455 460
 Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys Gly
 465 470 475 480
 Gly Phe Gly Val Phe Ala Gly Lys Lys Glu Gln Asp
 485 490

<210> 3180

<211> 492

<212> PRT

<213> Neisseria meningitidis

<400> 3180

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Ala Leu Ser
 1 5 10 15

Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
 20 25 30

Thr	Leu	Ser	Lys	Pro	Ala	Ala	Pro	Val	Val	Ser	Glu	Lys	Glu	Thr	Glu
		35					40					45			
Ala	Lys	Glu	Asp	Ala	Pro	Gln	Ala	Gly	Ser	Gln	Gly	Gln	Gly	Ala	Pro
	50					55					60				
Ser	Ala	Gln	Gly	Gly	Gln	Asp	Met	Ala	Ala	Val	Ser	Glu	Glu	Asn	Thr
65					70					75					80
Gly	Asn	Gly	Gly	Ala	Ala	Ala	Thr	Asp	Lys	Pro	Lys	Asn	Glu	Asp	Glu
				85					90					95	
Gly	Ala	Gln	Asn	Asp	Met	Pro	Gln	Asn	Ala	Ala	Asp	Thr	Asp	Ser	Leu
			100					105					110		
Thr	Pro	Asn	His	Thr	Pro	Ala	Ser	Asn	Met	Pro	Ala	Gly	Asn	Met	Glu
		115					120					125			
Asn	Gln	Ala	Pro	Asp	Ala	Gly	Glu	Ser	Glu	Gln	Pro	Ala	Asn	Gln	Pro
	130					135					140				
Asp	Met	Ala	Asn	Thr	Ala	Asp	Gly	Met	Gln	Gly	Asp	Asp	Pro	Ser	Ala
145					150					155					160
Gly	Gly	Glu	Asn	Ala	Gly	Asn	Thr	Ala	Ala	Gln	Gly	Thr	Asn	Gln	Ala
				165					170					175	
Glu	Asn	Asn	Gln	Thr	Ala	Gly	Ser	Gln	Asn	Pro	Ala	Ser	Ser	Thr	Asn
			180					185					190		
Pro	Ser	Ala	Thr	Asn	Ser	Gly	Gly	Asp	Phe	Gly	Arg	Thr	Asn	Val	Gly
		195					200					205			
Asn	Ser	Val	Val	Ile	Asp	Gly	Pro	Ser	Gln	Asn	Ile	Thr	Leu	Thr	His
	210					215					220				
Cys	Lys	Gly	Asp	Ser	Cys	Ser	Gly	Asn	Asn	Phe	Leu	Asp	Glu	Glu	Val
225					230					235					240
Gln	Leu	Lys	Ser	Glu	Phe	Glu	Lys	Leu	Ser	Asp	Ala	Asp	Lys	Ile	Ser
				245					250					255	
Asn	Tyr	Lys	Lys	Asp	Gly	Lys	Asn	Asp	Gly	Lys	Asn	Asp	Lys	Phe	Val
			260					265					270		
Gly	Leu	Val	Ala	Asp	Ser	Val	Gln	Met	Lys	Gly	Ile	Asn	Gln	Tyr	Ile
		275					280					285			
Ile	Phe	Tyr	Lys	Pro	Lys	Pro	Thr	Ser	Phe	Ala	Arg	Phe	Arg	Arg	Ser
	290					295					300				
Ala	Arg	Ser	Arg	Arg	Ser	Leu	Pro	Ala	Glu	Met	Pro	Leu	Ile	Pro	Val
305					310					315					320
Asn	Gln	Ala	Asp	Thr	Leu	Ile	Val	Asp	Gly	Glu	Ala	Val	Ser	Leu	Thr
				325					330						335

Gly His Ser Gly Asn Ile Phe Ala Pro Glu Gly Asn Tyr Arg Tyr Leu
340 345 350

Thr Tyr Gly Ala Glu Lys Leu Pro Gly Gly Ser Tyr Ala Leu Arg Val
355 360 365

Gln Gly Glu Pro Ser Lys Gly Glu Met Leu Ala Gly Thr Ala Val Tyr
370 375 380

Asn Gly Glu Val Leu His Phe His Thr Glu Asn Gly Arg Pro Ser Pro
385 390 395 400

Ser Arg Gly Arg Phe Ala Ala Lys Val Asp Phe Gly Ser Lys Ser Val
405 410 415

Asp Gly Ile Ile Asp Ser Gly Asp Gly Leu His Met Gly Thr Gln Lys
420 425 430

Phe Lys Ala Ala Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr Glu
435 440 445

Asn Gly Gly Gly Asp Val Ser Gly Lys Phe Tyr Gly Pro Ala Gly Glu
450 455 460

Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys Gly
465 470 475 480

Gly Phe Gly Val Phe Ala Gly Lys Lys Glu Gln Asp
485 490

<210> 3181

<211> 488

<212> PRT

<213> Neisseria meningitidis

<400> 3181

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Ala Leu Ser
1 5 10 15

Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30

Thr Leu Ser Lys Pro Ala Ala Pro Val Val Ser Glu Lys Glu Thr Glu
35 40 45

Ala Lys Glu Asp Ala Pro Gln Ala Gly Ser Gln Gly Gln Gly Ala Pro
50 55 60

Ser Ala Gln Gly Ser Gln Asp Met Ala Ala Val Ser Glu Glu Asn Thr
65 70 75 80

Gly Asn Gly Gly Ala Val Thr Ala Asp Asn Pro Lys Asn Glu Asp Glu
85 90 95

Val Ala Gln Asn Asp Met Pro Gln Asn Ala Ala Gly Thr Asp Ser Ser

[illegible]

	405		410		415
Asp Ser Gly Asp Asp Leu His Met Gly Thr Gln Lys Phe Lys Ala Ala	420		425		430
Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr Glu Asn Gly Ser Gly	435		440		445
Asp Val Ser Gly Lys Phe Tyr Gly Pro Ala Gly Glu Glu Val Ala Gly	450		455		460
Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys Gly Gly Phe Gly Val	465		470		475
					480
Phe Ala Gly Lys Lys Glu Gln Asp	485				

<210> 3182
 <211> 497
 <212> PRT
 <213> Neisseria meningitidis

<400> 3182
Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Val Ala Leu Ser
1 5 10 15
Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30
Thr Leu Ser Lys Pro Ala Ala Pro Val Val Thr Glu Asp Val Gly Glu
35 40 45
Glu Val Leu Pro Lys Glu Lys Lys Asp Glu Glu Ala Val Ser Gly Ala
50 55 60
Pro Gln Ala Asp Thr Gln Asp Ala Thr Ala Gly Lys Gly Gly Gln Asp
65 70 75 80
Met Ala Ala Val Ser Ala Glu Asn Thr Gly Asn Gly Gly Ala Ala Thr
85 90 95
Thr Asp Asn Pro Glu Asn Lys Asp Glu Gly Pro Gln Asn Asp Met Pro
100 105 110
Gln Asn Ala Ala Asp Thr Asp Ser Ser Thr Pro Asn His Thr Pro Ala
115 120 125
Pro Asn Met Pro Thr Arg Asp Met Gly Asn Gln Ala Pro Asp Ala Gly
130 135 140
Glu Ser Ala Gln Pro Ala Asn Gln Pro Asp Met Ala Asn Ala Ala Asp
145 150 155 160
Gly Met Gln Gly Asp Asp Pro Ser Ala Gly Glu Asn Ala Gly Asn Thr
165 170 175

Ala Asp Gln Ala Ala Asn Gln Ala Glu Asn Asn Gln Val Gly Gly Ser
 180 185 190
 Gln Asn Pro Ala Ser Ser Thr Asn Pro Asn Ala Thr Asn Gly Gly Ser
 195 200 205
 Asp Phe Gly Arg Ile Asn Val Ala Asn Gly Ile Lys Leu Asp Ser Gly
 210 215 220
 Ser Glu Asn Val Thr Leu Thr His Cys Lys Asp Lys Val Cys Asp Arg
 225 230 235 240
 Asp Phe Leu Asp Glu Glu Ala Pro Pro Lys Ser Glu Phe Glu Lys Leu
 245 250 255
 Ser Asp Glu Glu Lys Ile Asn Lys Tyr Lys Lys Asp Glu Gln Arg Glu
 260 265 270
 Asn Phe Val Gly Leu Val Ala Asp Arg Val Glu Lys Asn Gly Thr Asn
 275 280 285
 Lys Tyr Val Ile Ile Tyr Lys Asp Lys Ser Ala Ser Ser Ser Ser Ala
 290 295 300
 Arg Phe Arg Arg Ser Ala Arg Ser Arg Arg Ser Leu Pro Ala Glu Met
 305 310 315 320
 Pro Leu Ile Pro Val Asn Gln Ala Asp Thr Leu Ile Val Asp Gly Glu
 325 330 335
 Ala Val Ser Leu Thr Gly His Ser Gly Asn Ile Phe Ala Pro Glu Gly
 340 345 350
 Asn Tyr Arg Tyr Leu Thr Tyr Gly Ala Glu Lys Leu Ser Gly Gly Ser
 355 360 365
 Tyr Ala Leu Ser Val Gln Gly Glu Pro Ala Lys Gly Glu Met Leu Ala
 370 375 380
 Gly Thr Ala Val Tyr Asn Gly Glu Val Leu His Phe His Met Glu Asn
 385 390 395 400
 Gly Arg Pro Ser Pro Ser Gly Gly Arg Phe Ala Ala Lys Val Asp Phe
 405 410 415
 Gly Ser Lys Ser Val Asp Gly Ile Ile Asp Ser Gly Asp Asp Leu His
 420 425 430
 Met Gly Thr Gln Lys Phe Lys Ala Val Ile Asp Gly Asn Gly Phe Lys
 435 440 445
 Gly Thr Trp Thr Glu Asn Gly Gly Gly Asp Val Ser Gly Arg Phe Tyr
 450 455 460
 Gly Pro Ala Gly Glu Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr
 465 470 475 480

Asp Ala Glu Lys Gly Gly Phe Gly Val Phe Ala Gly Lys Lys Glu Gln
485 490 495

Asp

<210> 3183

<211> 429

<212> PRT

<213> Neisseria meningitidis

<400> 3183

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Pro Leu Ser
1 5 10 15

Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30

Thr Pro Ser Lys Pro Ala Ala Pro Val Val Ala Glu Asn Ala Gly Glu
35 40 45

Gly Val Leu Pro Lys Glu Lys Lys Asp Glu Glu Ala Ala Gly Gly Ala
50 55 60

Pro Gln Ala Asp Thr Gln Asp Ala Thr Ala Gly Glu Gly Ser Gln Asp
65 70 75 80

Met Ala Ala Val Ser Ala Glu Asn Thr Gly Asn Gly Gly Ala Ala Thr
85 90 95

Thr Asp Asn Pro Lys Asn Glu Asp Ala Gly Ala Gln Asn Asp Met Pro
100 105 110

Gln Asn Ala Ala Glu Ser Ala Asn Gln Thr Gly Asn Asn Gln Pro Ala
115 120 125

Gly Ser Ser Asp Ser Ala Pro Ala Ser Asn Pro Ala Pro Ala Asn Gly
130 135 140

Gly Ser Asp Phe Gly Arg Thr Asn Val Gly Asn Ser Val Val Ile Asp
145 150 155 160

Gly Pro Ser Gln Asn Ile Thr Leu Thr His Cys Lys Gly Asp Ser Cys
165 170 175

Asn Gly Asp Asn Leu Leu Asp Glu Glu Ala Pro Ser Lys Ser Glu Phe
180 185 190

Glu Lys Leu Ser Asp Glu Glu Lys Ile Lys Arg Tyr Lys Lys Asp Glu
195 200 205

Gln Arg Glu Asn Phe Val Gly Leu Val Ala Asp Arg Val Lys Lys Asp
210 215 220

Gly Thr Asn Lys Tyr Ile Ile Phe Tyr Thr Asp Lys Pro Pro Thr Arg
225 230 235 240

Ser Ala Arg Ser Arg Arg Ser Leu Pro Ala Glu Ile Pro Leu Ile Pro
245 250 255

Val Asn Gln Ala Asp Thr Leu Ile Val Asp Gly Glu Ala Val Ser Leu
260 265 270

Thr Gly His Ser Gly Asn Ile Phe Ala Pro Glu Gly Asn Tyr Arg Tyr
275 280 285

Leu Thr Tyr Gly Ala Glu Lys Leu Pro Gly Gly Ser Tyr Ala Leu Arg
290 295 300

Val Gln Gly Glu Pro Ala Lys Gly Glu Met Leu Val Gly Thr Ala Val
305 310 315 320

Tyr Asn Gly Glu Val Leu His Phe His Met Glu Asn Gly Arg Pro Tyr
325 330 335

Pro Ser Gly Gly Arg Phe Ala Ala Lys Val Asp Phe Gly Ser Lys Ser
340 345 350

Val Asp Gly Ile Ile Asp Ser Gly Asp Asp Leu His Met Gly Thr Gln
355 360 365

Lys Phe Lys Ala Ala Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr
370 375 380

Glu Asn Gly Gly Gly Asp Val Ser Gly Arg Phe Tyr Gly Pro Ala Gly
385 390 395 400

Glu Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys
405 410 415

Gly Gly Phe Gly Val Phe Ala Gly Lys Lys Asp Arg Asp
420 425

<210> 3184

<211> 488

<212> PRT

<213> Neisseria meningitidis

<400> 3184

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Ala Leu Ser
1 5 10 15

Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30

Thr Leu Ser Lys Pro Ala Ala Pro Val Val Ser Glu Lys Glu Thr Glu
35 40 45

Ala Lys Glu Asp Ala Pro Gln Ala Gly Ser Gln Gly Gln Gly Ala Pro
50 55 60

Ser Ala Gln Gly Ser Gln Asp Met Ala Ala Val Ser Glu Glu Asn Thr

65	70	75	80
Gly Asn Gly Gly Ala Val Thr Ala Asp Asn Pro Lys Asn Glu Asp Glu	85	90	95
Val Ala Gln Asn Asp Met Pro Gln Asn Ala Ala Gly Thr Asp Ser Ser	100	105	110
Thr Pro Asn His Thr Pro Asp Pro Asn Met Leu Ala Gly Asn Met Glu	115	120	125
Asn Gln Ala Thr Asp Ala Gly Glu Ser Ser Gln Pro Ala Asn Gln Pro	130	135	140
Asp Met Ala Asn Ala Ala Asp Gly Met Gln Gly Asp Asp Pro Ser Ala	145	150	155
Gly Gly Gln Asn Ala Gly Asn Thr Ala Ala Gln Gly Ala Asn Gln Ala	165	170	175
Gly Asn Asn Gln Ala Ala Gly Ser Ser Asp Pro Ile Pro Ala Ser Asn	180	185	190
Pro Ala Pro Ala Asn Gly Gly Ser Asn Phe Gly Arg Val Asp Leu Ala	195	200	205
Asn Gly Val Leu Ile Asp Gly Pro Ser Gln Asn Ile Thr Leu Thr His	210	215	220
Cys Lys Gly Asp Ser Cys Ser Gly Asn Asn Phe Leu Asp Glu Glu Val	225	230	235
Gln Leu Lys Ser Glu Phe Glu Lys Leu Ser Asp Ala Asp Lys Ile Ser	245	250	255
Asn Tyr Lys Lys Asp Gly Lys Asn Asp Lys Phe Val Gly Leu Val Ala	260	265	270
Asp Ser Val Gln Met Lys Gly Ile Asn Gln Tyr Ile Ile Phe Tyr Lys	275	280	285
Pro Lys Pro Thr Ser Phe Ala Arg Phe Arg Arg Ser Ala Arg Ser Arg	290	295	300
Arg Ser Leu Pro Ala Glu Met Pro Leu Ile Pro Val Asn Gln Ala Asp	305	310	315
Thr Leu Ile Val Asp Gly Glu Ala Val Ser Leu Thr Gly His Ser Gly	325	330	335
Asn Ile Phe Ala Pro Glu Gly Asn Tyr Arg Tyr Leu Thr Tyr Gly Ala	340	345	350
Glu Lys Leu Pro Gly Gly Ser Tyr Ala Leu Arg Val Gln Gly Glu Pro	355	360	365
Ala Lys Gly Glu Met Leu Ala Gly Ala Ala Val Tyr Asn Gly Glu Val			

370		375		380
Leu His Phe His Thr Glu Asn Gly Arg Pro Tyr Pro Thr Arg Gly Arg				
385		390		395 400
Phe Ala Ala Lys Val Asp Phe Gly Ser Lys Ser Val Asp Gly Ile Ile				
	405		410	415
Asp Ser Gly Asp Asp Leu His Met Gly Thr Gln Lys Phe Lys Ala Ala				
	420		425	430
Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr Glu Asn Gly Ser Gly				
	435		440	445
Asp Val Ser Gly Lys Phe Tyr Gly Pro Ala Gly Glu Glu Val Ala Gly				
	450		455	460
Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys Gly Gly Phe Gly Val				
465		470	475	480
Phe Ala Gly Lys Lys Glu Gln Asp				
	485			

<210> 3185

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3185

Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Ala Val Phe Gly Phe				
1		5		10 15
Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg				
	20		25	30
Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile				
	35		40	45
Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro				
	50		55	60
Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu				
65		70	75	80
Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala				
	85		90	95
Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln				
	100		105	110
Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe				
	115		120	125
Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu				
	130		135	140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160

Leu Val Pro Pro Gln Glu Ile Leu Arg Ala Met Gln Ala Gln Ile Thr
165 170 175

Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
180 185 190

Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
195 200 205

Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
210 215 220

Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
225 230 235 240

Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
245 250 255

Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3186

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3186

Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Val Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
 100 105 110
 Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
 305 310 315

<210> 3187

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3187

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
 1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
 20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile

35					40					45					
Pro	Phe	Ile	Asp	Arg	Val	Ala	Tyr	Arg	His	Ser	Leu	Lys	Glu	Ile	Pro
50						55					60				
Leu	Asp	Val	Pro	Ser	Gln	Val	Cys	Ile	Thr	Arg	Asp	Asn	Thr	Gln	Leu
65					70					75					80
Thr	Val	Asp	Gly	Ile	Ile	Tyr	Phe	Gln	Val	Thr	Asp	Pro	Lys	Leu	Ala
				85					90					95	
Ser	Tyr	Gly	Ser	Ser	Asn	Tyr	Ile	Met	Ala	Ile	Thr	Gln	Leu	Ala	Gln
			100					105					110		
Thr	Thr	Leu	Arg	Ser	Val	Ile	Gly	Arg	Met	Glu	Leu	Asp	Lys	Thr	Phe
		115					120					125			
Glu	Glu	Arg	Asp	Glu	Ile	Asn	Ser	Thr	Val	Val	Ala	Ala	Leu	Asp	Glu
	130					135					140				
Ala	Ala	Gly	Ala	Trp	Gly	Val	Lys	Val	Leu	Arg	Tyr	Glu	Ile	Lys	Asp
145					150					155					160
Leu	Val	Pro	Pro	Gln	Glu	Ile	Leu	Arg	Ser	Met	Gln	Ala	Gln	Ile	Thr
				165					170					175	
Ala	Glu	Arg	Glu	Lys	Arg	Ala	Arg	Ile	Ala	Glu	Ser	Glu	Gly	Arg	Lys
			180					185					190		
Ile	Glu	Gln	Ile	Asn	Leu	Ala	Ser	Gly	Gln	Arg	Glu	Ala	Glu	Ile	Gln
	195						200					205			
Gln	Ser	Glu	Gly	Glu	Ala	Gln	Ala	Ala	Val	Asn	Ala	Ser	Asn	Ala	Glu
	210					215					220				
Lys	Ile	Ala	Arg	Ile	Asn	Arg	Ala	Lys	Gly	Glu	Ala	Glu	Ser	Leu	Arg
225					230					235					240
Leu	Val	Ala	Glu	Ala	Asn	Ala	Glu	Ala	Ile	Arg	Gln	Ile	Ala	Ala	Ala
				245					250					255	
Leu	Gln	Thr	Gln	Gly	Gly	Ala	Asp	Ala	Val	Asn	Leu	Lys	Ile	Ala	Glu
			260					265					270		
Gln	Tyr	Val	Ala	Ala	Phe	Asn	Asn	Leu	Ala	Lys	Glu	Ser	Asn	Thr	Leu
		275					280					285			
Ile	Met	Pro	Ala	Asn	Val	Ala	Asp	Ile	Gly	Ser	Leu	Ile	Ser	Ala	Gly
	290					295					300				
Met	Lys	Ile	Ile	Asp	Ser	Ser	Lys	Thr	Ala	Lys					
305					310					315					

<210> 3188
 <211> 315
 <212> PRT

<213> Neisseria meningitidis

<400> 3188

Met	Glu	Phe	Phe	Ile	Ile	Leu	Leu	Val	Ala	Val	Ala	Val	Phe	Gly	Phe	
1				5					10					15		
Lys	Ser	Phe	Val	Val	Ile	Pro	Gln	Gln	Glu	Val	His	Val	Val	Glu	Arg	
			20					25						30		
Leu	Gly	Arg	Phe	His	Arg	Ala	Leu	Thr	Ala	Gly	Leu	Asn	Ile	Leu	Ile	
		35					40					45				
Pro	Phe	Ile	Asp	Arg	Val	Ala	Tyr	Arg	His	Ser	Leu	Lys	Glu	Ile	Pro	
	50					55					60					
Leu	Asp	Val	Pro	Ser	Gln	Val	Cys	Ile	Thr	Arg	Asp	Asn	Thr	Gln	Leu	
65					70					75					80	
Thr	Val	Asp	Gly	Ile	Ile	Tyr	Phe	Gln	Val	Thr	Asp	Pro	Lys	Leu	Ala	
				85					90						95	
Ser	Tyr	Gly	Ser	Ser	Asn	Tyr	Ile	Met	Ala	Ile	Thr	Gln	Leu	Ala	Gln	
			100					105					110			
Thr	Thr	Leu	Arg	Ser	Val	Ile	Gly	Arg	Met	Glu	Leu	Asp	Lys	Thr	Phe	
		115					120					125				
Glu	Glu	Arg	Asp	Glu	Ile	Asn	Ser	Thr	Val	Val	Ser	Ala	Leu	Asp	Glu	
	130					135					140					
Ala	Ala	Gly	Ala	Trp	Gly	Val	Lys	Val	Leu	Arg	Tyr	Glu	Ile	Lys	Asp	
145					150					155					160	
Leu	Val	Pro	Pro	Gln	Glu	Ile	Leu	Arg	Ser	Met	Gln	Ala	Gln	Ile	Thr	
				165					170						175	
Ala	Glu	Arg	Glu	Lys	Arg	Ala	Arg	Ile	Ala	Glu	Ser	Glu	Gly	Arg	Lys	
			180					185						190		
Ile	Glu	Gln	Ile	Asn	Leu	Ala	Ser	Gly	Gln	Arg	Glu	Ala	Glu	Ile	Gln	
		195					200					205				
Gln	Ser	Glu	Gly	Glu	Ala	Gln	Ala	Ala	Val	Asn	Ala	Ser	Asn	Ala	Glu	
	210					215					220					
Lys	Ile	Ala	Arg	Ile	Asn	Arg	Ala	Lys	Gly	Glu	Ala	Glu	Ser	Leu	Arg	
225					230					235					240	
Leu	Val	Ala	Glu	Ala	Asn	Ala	Glu	Ala	Ile	Arg	Gln	Ile	Ala	Ala	Ala	
			245						250					255		
Leu	Gln	Thr	Gln	Gly	Gly	Ala	Asp	Ala	Val	Asn	Leu	Lys	Ile	Ala	Glu	
			260					265						270		
Gln	Tyr	Val	Ala	Ala	Phe	Asn	Asn	Leu	Ala	Lys	Glu	Ser	Asn	Thr	Leu	
		275					280					285				

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3189

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3189

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
130 135 140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160

Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
165 170 175

Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
180 185 190

Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
195 200 205

Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
210 215 220

Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
225 230 235 240

Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
245 250 255

Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3190

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3190

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
130 135 140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160

Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
165 170 175

Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys

180	185	190
Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln		
195	200	205
Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu		
210	215	220
Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg		
225	230	235
Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala		
245	250	255
Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu		
260	265	270
Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu		
275	280	285
Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly		
290	295	300
Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys		
305	310	315

<210> 3191

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3191

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe		
1	5	10
Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg		
20	25	30
Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile		
35	40	45
Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro		
50	55	60
Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu		
65	70	75
Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala		
85	90	95
Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln		
100	105	110
Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe		
115	120	125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
 305 310 315

<210> 3192

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3192

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
 1 5 10 15
 Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
 20 25 30
 Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
 35 40 45
 Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
 50 55 60
 Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
 65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
 85 90 95
 Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
 100 105 110
 Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Phe Ser Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Lys Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
 305 310 315

<210> 3193

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3193

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
 1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg

20					25					30					
Leu	Gly	Arg	Phe	His	Arg	Ala	Leu	Thr	Ala	Gly	Leu	Asn	Ile	Leu	Ile
		35					40					45			
Pro	Phe	Ile	Asp	Arg	Val	Ala	Tyr	Arg	His	Ser	Leu	Lys	Glu	Ile	Pro
	50					55					60				
Leu	Asp	Val	Pro	Ser	Gln	Val	Cys	Ile	Thr	Arg	Asp	Asn	Thr	Gln	Leu
65					70					75					80
Thr	Val	Asp	Gly	Ile	Ile	Tyr	Phe	Gln	Val	Thr	Asp	Pro	Lys	Leu	Ala
				85					90					95	
Ser	Tyr	Gly	Ser	Ser	Asn	Tyr	Ile	Met	Ala	Ile	Thr	Gln	Leu	Ala	Gln
			100					105					110		
Thr	Thr	Leu	Arg	Ser	Val	Ile	Gly	Arg	Met	Glu	Leu	Asp	Lys	Thr	Phe
		115					120					125			
Glu	Glu	Arg	Asp	Glu	Ile	Asn	Ser	Thr	Val	Val	Ala	Ala	Leu	Asp	Glu
	130					135					140				
Ala	Ala	Gly	Ala	Trp	Gly	Val	Lys	Val	Leu	Arg	Tyr	Glu	Ile	Lys	Asp
145					150					155					160
Leu	Val	Pro	Pro	Gln	Glu	Ile	Leu	Arg	Ser	Met	Gln	Ala	Gln	Ile	Thr
				165					170					175	
Ala	Glu	Arg	Glu	Lys	Arg	Ala	Arg	Ile	Ala	Glu	Ser	Glu	Gly	Arg	Lys
		180						185					190		
Ile	Glu	Gln	Ile	Asn	Leu	Ala	Ser	Gly	Gln	Arg	Glu	Ala	Glu	Ile	Gln
	195						200					205			
Gln	Ser	Glu	Gly	Glu	Ala	Gln	Ala	Ala	Val	Asn	Ala	Ser	Asn	Ala	Glu
	210					215					220				
Lys	Ile	Ala	Arg	Ile	Asn	Arg	Ala	Lys	Gly	Glu	Ala	Glu	Ser	Leu	Arg
225					230					235					240
Leu	Val	Ala	Glu	Ala	Asn	Ala	Glu	Ala	Ile	Arg	Gln	Ile	Ala	Ala	Ala
				245					250					255	
Leu	Gln	Thr	Gln	Gly	Gly	Ala	Asp	Ala	Val	Asn	Leu	Lys	Ile	Ala	Glu
			260					265					270		
Gln	Tyr	Val	Ala	Ala	Phe	Asn	Asn	Leu	Ala	Lys	Glu	Ser	Asn	Thr	Leu
		275					280						285		
Ile	Met	Pro	Ala	Asn	Val	Ala	Asp	Ile	Gly	Ser	Leu	Ile	Ser	Ala	Gly
	290					295					300				
Met	Lys	Ile	Ile	Asp	Ser	Ser	Lys	Thr	Ala	Lys					
305					310					315					

<210> 3194
<211> 315
<212> PRT
<213> Neisseria meningitidis

<400> 3194
Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Ala Val Phe Gly Phe
1 5 10 15
Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30
Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45
Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60
Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80
Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95
Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110
Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125
Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
130 135 140
Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160
Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
165 170 175
Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
180 185 190
Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
195 200 205
Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
210 215 220
Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
225 230 235 240
Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
245 250 255
Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3195

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3195

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
130 135 140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160

Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
165 170 175

Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
180 185 190

Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
195 200 205

Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
210 215 220

Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
225 230 235 240

Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
245 250 255

Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3196

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3196

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
130 135 140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160

Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr

165	170	175
Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys		
180	185	190
Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln		
195	200	205
Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu		
210	215	220
Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg		
225	230	235
Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala		
245	250	255
Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu		
260	265	270
Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu		
275	280	285
Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly		
290	295	300
Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys		
305	310	315

<210> 3197

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3197

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe		
1	5	10
Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg		
20	25	30
Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile		
35	40	45
Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro		
50	55	60
Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu		
65	70	75
Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala		
85	90	95
Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln		
100	105	110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
 305 310 315

<210> 3198

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3198

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
 1 5 10 15
 Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
 20 25 30
 Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
 35 40 45
 Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
 50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
 65 70 75 80
 Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
 85 90 95
 Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
 100 105 110
 Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Met Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
 305 310 315

<210> 3199

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3199

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe

1	5	10	15
Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg	20	25	30
Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile	35	40	45
Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro	50	55	60
Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu	65	70	75
Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala	85	90	95
Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln	100	105	110
Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe	115	120	125
Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu	130	135	140
Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp	145	150	155
Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr	165	170	175
Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys	180	185	190
Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln	195	200	205
Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu	210	215	220
Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg	225	230	235
Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala	245	250	255
Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu	260	265	270
Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu	275	280	285
Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly	290	295	300
Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys			

305

310

315

<210> 3200

<211> 315

<212> PRT

<213> *Neisseria meningitidis*

<400> 3200

Met	Glu	Phe	Phe	Ile	Ile	Leu	Leu	Ala	Ala	Val	Val	Val	Phe	Gly	Phe
1				5				10						15	

Lys	Ser	Phe	Val	Val	Ile	Pro	Gln	Gln	Glu	Val	His	Val	Val	Glu	Arg
			20				25						30		

Leu	Gly	Arg	Phe	His	Arg	Ala	Leu	Thr	Ala	Gly	Leu	Asn	Ile	Leu	Ile
		35					40					45			

Pro	Phe	Ile	Asp	Arg	Val	Ala	Tyr	Arg	His	Ser	Leu	Lys	Glu	Ile	Pro
	50					55					60				

Leu	Asp	Val	Pro	Ser	Gln	Val	Cys	Ile	Thr	Arg	Asp	Asn	Thr	Gln	Leu
65					70					75					80

Thr	Val	Asp	Gly	Ile	Ile	Tyr	Phe	Gln	Val	Thr	Asp	Pro	Lys	Leu	Ala
				85					90					95	

Ser	Tyr	Gly	Ser	Ser	Asn	Tyr	Ile	Met	Ala	Ile	Thr	Gln	Leu	Ala	Gln
			100					105					110		

Thr	Thr	Leu	Arg	Ser	Val	Ile	Gly	Arg	Met	Glu	Leu	Asp	Lys	Thr	Phe
		115					120					125			

Glu	Glu	Arg	Asp	Glu	Ile	Asn	Ser	Thr	Val	Val	Ser	Ala	Leu	Asp	Glu
	130					135					140				

Ala	Ala	Gly	Ala	Trp	Gly	Val	Lys	Val	Leu	Arg	Tyr	Glu	Ile	Lys	Asp
145					150					155					160

Leu	Val	Pro	Pro	Gln	Glu	Ile	Leu	Arg	Ser	Met	Gln	Ala	Gln	Ile	Thr
				165					170					175	

Ala	Glu	Arg	Glu	Lys	Arg	Ala	Arg	Ile	Ala	Glu	Ser	Glu	Gly	Arg	Lys
			180					185					190		

Ile	Glu	Gln	Ile	Asn	Leu	Ala	Ser	Gly	Gln	Arg	Glu	Ala	Lys	Ile	Gln
	195						200					205			

Gln	Ser	Glu	Gly	Glu	Ala	Gln	Ala	Ala	Val	Asn	Ala	Ser	Asn	Ala	Glu
	210					215					220				

Lys	Ile	Ala	Arg	Ile	Asn	Arg	Ala	Lys	Gly	Glu	Ala	Glu	Ser	Leu	Arg
225					230					235					240

Leu	Val	Ala	Glu	Ala	Asn	Ala	Glu	Ala	Ile	Arg	Gln	Ile	Ala	Ala	Ala
			245					250						255	

Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3201

<211> 315

<212> PRT

<213> *Neisseria meningitidis*

<400> 3201

Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Val Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
130 135 140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160

Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
165 170 175

Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
180 185 190

Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
195 200 205

Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
210 215 220

Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
225 230 235 240

Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
245 250 255

Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3202

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3202

Met Glu Phe Phe Ile Ile Leu Leu Val Ala Val Ala Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
130 135 140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp

145	150	155	160
Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr			
	165	170	175
Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys			
	180	185	190
Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln			
	195	200	205
Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu			
	210	215	220
Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg			
	225	230	235
Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala			
	245	250	255
Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu			
	260	265	270
Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu			
	275	280	285
Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly			
	290	295	300
Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys			
	305	310	315

<210> 3203
 <211> 315
 <212> PRT
 <213> Neisseria meningitidis

<400> 3203
 Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Ala Val Phe Gly Phe
 1 5 10 15
 Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
 20 25 30
 Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
 35 40 45
 Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
 50 55 60
 Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
 65 70 75 80
 Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
 85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
 100 105 110
 Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
 305 310 315

<210> 3204

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3204

Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Ala Val Phe Gly Phe
 1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
 20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
 35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
 50 55 60
 Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
 65 70 75 80
 Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
 85 90 95
 Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
 100 105 110
 Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
 115 120 125
 Glu Glu Arg Asp Glu Ile Asn Ser Ile Val Val Ser Ala Leu Asp Glu
 130 135 140
 Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
 145 150 155 160
 Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr
 165 170 175
 Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
 180 185 190
 Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Pro Glu Ile Gln
 195 200 205
 Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
 210 215 220
 Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
 225 230 235 240
 Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
 245 250 255
 Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
 260 265 270
 Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
 275 280 285
 Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
 290 295 300
 Met Lys Ile Ile Asp Ser Asn Lys Thr Ala Lys
 305 310 315

<210> 3205

<211> 315

<212> PRT

<213> Neisseria meningitidis

<400> 3205

Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Ala Val Phe Gly Phe
1 5 10 15

Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg
20 25 30

Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile
35 40 45

Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro
50 55 60

Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu
65 70 75 80

Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala
85 90 95

Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln
100 105 110

Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe
115 120 125

Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ser Ala Leu Asp Glu
130 135 140

Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp
145 150 155 160

Leu Val Pro Pro Gln Glu Ile Leu Arg Ala Met Gln Ala Gln Ile Thr
165 170 175

Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys
180 185 190

Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln
195 200 205

Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu
210 215 220

Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg
225 230 235 240

Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
245 250 255

Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly

290	295	300
Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys		
305	310	315
<210> 3206		
<211> 315		
<212> PRT		
<213> Neisseria meningitidis		
<400> 3206		
Met Glu Phe Phe Ile Ile Leu Leu Ala Ala Val Ala Val Phe Gly Phe		
1	5	10 15
Lys Ser Phe Val Val Ile Pro Gln Gln Glu Val His Val Val Glu Arg		
	20	25 30
Leu Gly Arg Phe His Arg Ala Leu Thr Ala Gly Leu Asn Ile Leu Ile		
	35	40 45
Pro Phe Ile Asp Arg Val Ala Tyr Arg His Ser Leu Lys Glu Ile Pro		
	50	55 60
Leu Asp Val Pro Ser Gln Val Cys Ile Thr Arg Asp Asn Thr Gln Leu		
	65	70 75 80
Thr Val Asp Gly Ile Ile Tyr Phe Gln Val Thr Asp Pro Lys Leu Ala		
	85	90 95
Ser Tyr Gly Ser Ser Asn Tyr Ile Met Ala Ile Thr Gln Leu Ala Gln		
	100	105 110
Thr Thr Leu Arg Ser Val Ile Gly Arg Met Glu Leu Asp Lys Thr Phe		
	115	120 125
Glu Glu Arg Asp Glu Ile Asn Ser Thr Val Val Ala Ala Leu Asp Glu		
	130	135 140
Ala Ala Gly Ala Trp Gly Val Lys Val Leu Arg Tyr Glu Ile Lys Asp		
	145	150 155 160
Leu Val Pro Pro Gln Glu Ile Leu Arg Ser Met Gln Ala Gln Ile Thr		
	165	170 175
Ala Glu Arg Glu Lys Arg Ala Arg Ile Ala Glu Ser Glu Gly Arg Lys		
	180	185 190
Ile Glu Gln Ile Asn Leu Ala Ser Gly Gln Arg Glu Ala Glu Ile Gln		
	195	200 205
Gln Ser Glu Gly Glu Ala Gln Ala Ala Val Asn Ala Ser Asn Ala Glu		
	210	215 220
Lys Ile Ala Arg Ile Asn Arg Ala Lys Gly Glu Ala Glu Ser Leu Arg		
	225	230 235 240

Leu Val Ala Glu Ala Asn Ala Glu Ala Ile Arg Gln Ile Ala Ala Ala
245 250 255

Leu Gln Thr Gln Gly Gly Ala Asp Ala Val Asn Leu Lys Ile Ala Glu
260 265 270

Gln Tyr Val Ala Ala Phe Asn Asn Leu Ala Lys Glu Ser Asn Thr Leu
275 280 285

Ile Met Pro Ala Asn Val Ala Asp Ile Gly Ser Leu Ile Ser Ala Gly
290 295 300

Met Lys Ile Ile Asp Ser Ser Lys Thr Ala Lys
305 310 315

<210> 3207

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3207

Met Lys Lys His Leu Leu Arg Ser Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Arg Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Ala Gly Ile Pro Asp
35 40 45

Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Met Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Arg Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140

Leu Lys Gly Asp Gly Arg Arg Thr Glu Arg Ala Arg Phe Pro Ile Tyr
145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175

Gly Gly Lys Asn Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190

Thr Ile Asp Asn Ala Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
225 230 235 240

Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
245 250 255

Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
260 265 270

Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
275 280 285

Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
290 295 300

Thr Ser Met Gln Gly Ile Lys Ala Tyr Met Arg Gln Asn Pro Gln Arg
305 310 315 320

Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
325 330 335

Leu Ala Gly Ser Gly Asn Glu Gly Pro Val Gly Ala Leu Gly Thr Pro
340 345 350

Leu Met Gly Glu Tyr Ala Gly Ala Ile Asp Arg His Tyr Ile Thr Leu
355 360 365

Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3208

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3208

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala

1	5	10	15
Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro	20	25	30
Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp	35	40	45
Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val	50	55	60
Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser	65	70	75
Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly	85	90	95
Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Val	100	105	110
Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala	115	120	125
Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val	130	135	140
Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr	145	150	155
Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg	165	170	175
Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly	180	185	190
Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Gln Phe	195	200	205
Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser	210	215	220
Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu	225	230	235
Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu	245	250	255
Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly	260	265	270
Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val	275	280	285
Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln	290	295	300
Thr Ser Met Gln Gly Ile Lys Ala Tyr Met Gln Gln Asn Pro Gln Arg			

305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Thr Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3209
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3209
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15
 Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30
 Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45
 Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60
 Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80
 Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
 85 90 95
 Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
 100 105 110
 Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
 115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
 130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
 145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
 165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
 180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
 195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240

Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255

Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270

Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285

Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300

Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320

Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335

Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350

Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365

Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3210
<211> 441
<212> PRT
<213> Neisseria meningitidis

<400> 3210
Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15
Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30
Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
35 40 45
Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60
Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80
Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95
Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110
Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125
Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140
Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160
Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175
Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190
Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
195 200 205
Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
210 215 220
Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
225 230 235 240
Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
245 250 255

Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	
			260					265					270			
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val	
		275					280					285				
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln	
	290					295					300					
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ser	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg	
305					310					315					320	
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu	
				325					330					335		
Leu	Ala	Gly	Ser	Ser	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro	
			340					345					350			
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Val	Asp	Arg	His	Tyr	Ile	Thr	Leu	
		355					360					365				
Gly	Ala	Pro	Leu	Phe	Val	Ala	Thr	Ala	His	Pro	Val	Thr	Arg	Lys	Ala	
	370					375					380					
Leu	Asn	Arg	Leu	Ile	Met	Ala	Gln	Asp	Thr	Gly	Ser	Ala	Ile	Lys	Gly	
385					390					395					400	
Ala	Val	Arg	Val	Asp	Tyr	Phe	Trp	Gly	Tyr	Gly	Asp	Glu	Ala	Gly	Glu	
				405					410					415		
Leu	Ala	Gly	Lys	Gln	Lys	Thr	Thr	Gly	Tyr	Val	Trp	Gln	Leu	Leu	Pro	
			420					425					430			
Asn	Gly	Met	Lys	Pro	Glu	Tyr	Arg	Pro								
		435					440									

<210> 3211

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3211

Met	Lys	Lys	Tyr	Leu	Phe	Arg	Ala	Ala	Leu	Tyr	Gly	Ile	Ala	Ala	Ala	
1				5					10					15		

Ile	Leu	Ala	Ala	Cys	Gln	Ser	Lys	Ser	Ile	Gln	Thr	Phe	Pro	Gln	Pro	
		20						25					30			

Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Val	Gly	Ile	Pro	Asp	
		35					40					45				

Pro	Ala	Gly	Thr	Thr	Val	Gly	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val	
	50					55					60					

Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser	
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	--

65	70	75	80
Leu Gln Ser Phe Arg	Leu Gly Cys Ala Asn	Leu Lys Asn Arg	Gln Gly
	85	90	95
Trp Gln Asp Val Cys	Ala Gln Ala Phe	Gln Thr Pro Val	His Ser Phe
	100	105	110
Gln Ala Lys Gln Phe	Phe Glu Arg Tyr	Phe Thr Pro Trp	Gln Val Ala
	115	120	125
Gly Asn Gly Ser Leu	Ala Gly Thr Val	Thr Gly Tyr Tyr	Glu Pro Val
	130	135	140
Leu Lys Gly Asp Asp	Arg Arg Thr Ala	Gln Ala Arg Phe	Pro Ile Tyr
	145	150	155
Gly Ile Pro Asp Asp	Phe Ile Ser Val	Pro Leu Pro Ala	Gly Leu Arg
	165	170	175
Ser Gly Lys Ala Leu	Val Arg Ile Arg	Gln Thr Gly Lys	Asn Ser Gly
	180	185	190
Thr Ile Asp Asn Thr	Gly Gly Thr His	Thr Ala Asp Leu	Ser Arg Phe
	195	200	205
Pro Ile Thr Ala Arg	Thr Thr Ala Ile	Lys Gly Arg Phe	Glu Gly Ser
	210	215	220
Arg Phe Leu Pro Tyr	His Thr Arg Asn	Gln Ile Asn Gly	Gly Ala Leu
	225	230	235
Asp Gly Lys Ala Pro	Ile Leu Gly Tyr	Ala Glu Asp Pro	Val Glu Leu
	245	250	255
Phe Phe Met His Ile	Gln Gly Ser Gly	Arg Leu Lys Thr	Pro Ser Gly
	260	265	270
Lys Tyr Ile Arg Ile	Gly Tyr Ala Asp	Lys Asn Glu His	Pro Tyr Val
	275	280	285
Ser Ile Gly Arg Tyr	Met Ala Asp Lys	Gly Tyr Leu Lys	Leu Gly Gln
	290	295	300
Thr Ser Met Gln Gly	Ile Lys Ser Tyr	Met Arg Gln Asn	Pro Gln Arg
	305	310	315
Leu Ala Glu Val Leu	Gly Gln Asn Pro	Ser Tyr Ile Phe	Phe Arg Glu
	325	330	335
Leu Ala Gly Ser Ser	Asn Asp Gly Pro	Val Gly Ala Leu	Gly Thr Pro
	340	345	350
Leu Met Gly Glu Tyr	Ala Gly Ala Val	Asp Arg His Tyr	Ile Thr Leu
	355	360	365
Gly Ala Pro Leu Phe	Val Ala Thr Ala	His Pro Val Thr	Arg Lys Ala

370		375		380
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly				
385		390		400
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu				
	405		410	415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro				
	420		425	430
Asn Gly Met Lys Pro Glu Tyr Arg Pro				
	435		440	

<210> 3212
 <211> 441
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3212
Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala
1 5 10 15
Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30
Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Ala
35 40 45
Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60
Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80
Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95
Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110
Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125
Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140
Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160
Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175
Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190

Thr Ile Asp Asn Ala Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
 195 200 205
 Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220
 Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240
 Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255
 Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270
 Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ala Tyr Met Gln Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Thr Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3213

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3213

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15

Ile	Leu	Ala	Ala	Cys	Gln	Ser	Lys	Ser	Ile	Gln	Thr	Phe	Pro	Gln	Pro
			20					25					30		
Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Val	Gly	Ile	Pro	Asp
		35					40					45			
Pro	Ala	Gly	Thr	Thr	Val	Gly	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val
	50					55					60				
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser
65					70					75					80
Leu	Gln	Ser	Phe	Arg	Leu	Ser	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly
				85					90					95	
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe
			100					105					110		
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala
		115					120					125			
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val
		130				135					140				
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr
145					150					155					160
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg
				165					170					175	
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly
			180					185					190		
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe
		195					200					205			
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser
		210				215					220				
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu
225					230					235					240
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu
				245					250					255	
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly
			260					265					270		
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val
		275					280					285			
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln
		290				295					300				
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ala	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg
305					310					315					320

Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
325 330 335

Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
340 345 350

Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
355 360 365

Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3214

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3214

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
35 40 45

Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val

130	135	140
Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr		
145	150	155 160
Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg		
	165	170 175
Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly		
	180	185 190
Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe		
	195	200 205
Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser		
	210	215 220
Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu		
	225	230 235 240
Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu		
	245	250 255
Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly		
	260	265 270
Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val		
	275	280 285
Ser Ile Gly Lys Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln		
	290	295 300
Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg		
	305	310 315 320
Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu		
	325	330 335
Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro		
	340	345 350
Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu		
	355	360 365
Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala		
	370	375 380
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly		
	385	390 395 400
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu		
	405	410 415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro		
	420	425 430
Asn Gly Met Lys Pro Glu Tyr Arg Pro		

435

440

<210> 3215

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3215

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45

Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
 85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
 100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
 115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
 130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
 145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
 165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
 180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
 195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240

Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255

Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270
 Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3216
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3216
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15
 Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30
 Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45
 Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60
 Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80

Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly	85	90	95
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe	100	105	110
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala	115	120	125
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val	130	135	140
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr	145	150	155
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg	165	170	175
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly	180	185	190
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe	195	200	205
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser	210	215	220
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu	225	230	235
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu	245	250	255
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	260	265	270
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val	275	280	285
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln	290	295	300
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ala	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg	305	310	315
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu	325	330	335
Leu	Ala	Gly	Ser	Ser	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro	340	345	350
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Val	Asp	Arg	His	Tyr	Ile	Thr	Leu	355	360	365
Gly	Ala	Pro	Leu	Phe	Val	Ala	Thr	Ala	His	Pro	Val	Thr	Arg	Lys	Ala	370	375	380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3217

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3217

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Ala
35 40 45

Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Gln Phe

195	200	205
Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser 210 215 220		
Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu 225 230 235 240		
Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu 245 250 255		
Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly 260 265 270		
Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val 275 280 285		
Ser Ile Gly Lys Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln 290 295 300		
Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg 305 310 315 320		
Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu 325 330 335		
Leu Thr Gly Ser Gly Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro 340 345 350		
Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu 355 360 365		
Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala 370 375 380		
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly 385 390 395 400		
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu 405 410 415		
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro 420 425 430		
Asn Gly Met Lys Pro Glu Tyr Arg Pro 435 440		

<210> 3218

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3218

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Ala
 35 40 45

Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
 85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
 100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
 115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
 130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
 145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
 165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
 180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Gln Phe
 195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240

Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255

Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270

Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285

Ser Ile Gly Lys Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300

Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320

Leu 145	Lys	Gly	Asp	Asp	Arg 150	Arg	Thr	Ala	Gln	Ala 155	Arg	Phe	Pro	Ile	Tyr 160
Gly	Ile	Pro	Asp	Asp 165	Phe	Ile	Ser	Val	Pro 170	Leu	Pro	Ala	Gly	Leu 175	Arg
Ser	Gly	Lys	Ala 180	Leu	Val	Arg	Ile	Arg 185	Gln	Thr	Gly	Lys	Asn 190	Ser	Gly
Thr	Ile	Asp 195	Asn	Ala	Gly	Gly	Thr 200	His	Thr	Ala	Asp	Leu 205	Ser	Arg	Phe
Pro	Ile 210	Thr	Ala	Arg	Thr	Thr 215	Ala	Ile	Lys	Gly 220	Arg	Phe	Glu	Gly	Ser
Arg 225	Phe	Leu	Pro	Tyr	His 230	Thr	Arg	Asn	Gln	Ile 235	Asn	Gly	Gly	Ala	Leu 240
Asp	Gly	Lys	Ala	Pro 245	Ile	Leu	Gly	Tyr	Ala 250	Glu	Asp	Pro	Val	Glu 255	Leu
Phe	Phe	Met	His 260	Ile	Gln	Gly	Ser	Gly 265	Arg	Leu	Lys	Thr	Pro 270	Ser	Gly
Lys	Tyr 275	Ile	Arg	Ile	Gly	Tyr	Ala 280	Asp	Lys	Asn	Glu	His 285	Pro	Tyr	Val
Ser 290	Ile	Gly	Lys	Tyr	Met	Ala 295	Asp	Lys	Gly	Tyr	Leu 300	Lys	Leu	Gly	Gln
Thr 305	Ser	Met	Gln	Gly	Ile 310	Lys	Ser	Tyr	Met	Arg 315	Gln	Asn	Pro	Gln	Arg 320
Leu	Ala	Glu	Val	Leu 325	Gly	Gln	Asn	Pro	Ser 330	Tyr	Ile	Phe	Phe	Arg 335	Glu
Leu	Thr	Gly	Ser 340	Ser	Asn	Asp	Gly	Pro 345	Val	Gly	Ala	Leu	Gly 350	Thr	Pro
Leu	Met	Gly 355	Glu	Tyr	Ala	Gly	Ala 360	Val	Asp	Arg	His	Tyr 365	Ile	Thr	Leu
Gly 370	Ala	Pro	Leu	Phe	Val	Ala 375	Thr	Ala	His	Pro	Val 380	Thr	Arg	Lys	Ala
Leu 385	Asn	Arg	Leu	Ile	Met	Ala 390	Gln	Asp	Thr	Gly 395	Ser	Ala	Ile	Lys	Gly 400
Ala	Val	Arg	Val	Asp 405	Tyr	Phe	Trp	Gly	Tyr 410	Gly	Asp	Glu	Ala	Gly 415	Glu
Leu	Ala	Gly	Lys 420	Gln	Lys	Thr	Thr	Gly 425	Tyr	Val	Trp	Gln	Leu 430	Leu	Pro
Asn	Gly 435	Met	Lys	Pro	Glu	Tyr	Arg 440	Pro							

<210> 3220

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3220

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
35 40 45

Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
225 230 235 240

Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
245 250 255

Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly

260	265	270
Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val		
275	280	285
Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln		
290	295	300
Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg		
305	310	315
Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu		
	325	330
Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro		
	340	345
Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu		
	355	360
Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala		
	370	375
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly		
	385	390
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu		
	405	410
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro		
	420	425
Asn Gly Met Lys Pro Glu Tyr Arg Pro		
	435	440

<210> 3221

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3221

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala		
1	5	10
Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro		
	20	25
Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp		
	35	40
Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val		
	50	55
Pro His Leu Ser Leu Pro His Trp Ala Glu Gln Asp Phe Ala Lys Ser		
	65	70
		75
		80

Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly	85	90	95
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe	100	105	110
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala	115	120	125
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val	130	135	140
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr	145	150	155
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg	165	170	175
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly	180	185	190
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe	195	200	205
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser	210	215	220
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu	225	230	235
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu	245	250	255
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	260	265	270
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val	275	280	285
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln	290	295	300
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ala	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg	305	310	315
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu	325	330	335
Leu	Ala	Gly	Ser	Ser	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro	340	345	350
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Val	Asp	Arg	His	Tyr	Ile	Thr	Leu	355	360	365
Gly	Ala	Pro	Leu	Phe	Val	Ala	Thr	Ala	His	Pro	Val	Thr	Arg	Lys	Ala	370	375	380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3222

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3222

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Ala
35 40 45

Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190

Thr Ile Asp Asn Ala Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220
 Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240
 Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255
 Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270
 Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Lys Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Thr Gly Ser Arg Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3223
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3223
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro

20					25					30					
Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Val	Gly	Ile	Pro	Asp
		35					40					45			
Leu	Ala	Gly	Thr	Thr	Val	Gly	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val
	50					55					60				
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser
	65					70					75				80
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	His	Gln	Gly
				85					90					95	
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe
			100					105					110		
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala
		115					120					125			
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val
	130					135					140				
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr
	145					150					155				160
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg
				165					170					175	
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly
			180					185					190		
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe
		195					200					205			
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser
		210					215					220			
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu
				230					235						240
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu
				245					250					255	
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly
			260					265					270		
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val
		275					280					285			
Ser	Ile	Gly	Lys	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln
		290				295					300				
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ser	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg
		305				310					315				320
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu

	325		330		335
Leu Thr Gly Ser Gly Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro					
	340		345		350
Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu					
	355		360		365
Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala					
	370		375		380
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly					
385		390		395	400
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu					
	405		410		415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro					
	420		425		430
Asn Gly Met Lys Pro Glu Tyr Arg Pro					
	435		440		

<210> 3224

<211> 441

<212> PRT

<213> *Neisseria meningitidis*

<400> 3224

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala					
1		5		10	15
Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro					
	20		25		30
Asp Thr Ser Val Ile Asn Gly Pro Gly Arg Pro Val Gly Ile Pro Asp					
	35		40		45
Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val					
	50		55		60
Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser					
65		70		75	80
Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly					
	85		90		95
Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe					
	100		105		110
Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala					
	115		120		125
Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val					
	130		135		140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
 145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
 165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
 180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Gln Phe
 195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240

Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255

Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270

Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285

Ser Ile Gly Lys Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300

Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320

Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335

Leu Thr Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350

Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365

Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3225

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3225

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
35 40 45

Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
225 230 235 240

Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
245 250 255

Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
260 265 270

Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Lys Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Thr Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3226
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3226
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15
 Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30
 Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45
 Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60
 Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80
 Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly

85										90					95				
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe				
			100					105					110						
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala				
		115					120					125							
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val				
	130					135					140								
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr				
145					150					155					160				
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg				
				165					170					175					
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly				
			180					185					190						
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe				
		195					200					205							
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser				
	210					215					220								
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu				
225					230				235						240				
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu				
				245					250					255					
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly				
			260					265					270						
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val				
	275						280					285							
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln				
	290					295					300								
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ser	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg				
305					310					315					320				
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu				
				325					330					335					
Leu	Ala	Gly	Ser	Ser	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro				
			340					345					350						
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Val	Asp	Arg	His	Tyr	Ile	Thr	Leu				
	355						360					365							
Gly	Ala	Pro	Leu	Phe	Val	Ala	Thr	Ala	His	Pro	Val	Thr	Arg	Lys	Ala				
	370					375					380								
Leu	Asn	Arg	Leu	Ile	Met	Ala	Gln	Asp	Thr	Gly	Ser	Ala	Ile	Lys	Gly				

385		390		395		400
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu						
	405			410		415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro						
	420			425		430
Asn Gly Met Lys Pro Glu Tyr Arg Pro						
	435			440		

<210> 3227
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3227
Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15
Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30
Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
35 40 45
Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60
Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80
Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95
Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110
Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125
Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140
Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160
Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175
Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190
Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
225 230 235 240

Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
245 250 255

Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
260 265 270

Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
275 280 285

Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
290 295 300

Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
305 310 315 320

Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
325 330 335

Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
340 345 350

Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
355 360 365

Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3228

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3228

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Val	Gly	Ile	Pro	Asp	35	40	45	
Pro	Ala	Gly	Thr	Thr	Val	Gly	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val	50	55	60	
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser	65	70	75	80
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly	85	90	95	
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe	100	105	110	
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala	115	120	125	
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val	130	135	140	
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr	145	150	155	160
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg	165	170	175	
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly	180	185	190	
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe	195	200	205	
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser	210	215	220	
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu	225	230	235	240
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu	245	250	255	
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	260	265	270	
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val	275	280	285	
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln	290	295	300	
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ser	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg	305	310	315	320
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu	325	330	335	

Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
340 345 350

Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
355 360 365

Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3229

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3229

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
35 40 45

Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr

145		150		155		160
Gly Ile Pro Asp	Asp Phe Ile Ser Val	Pro Leu Pro Ala Gly	Leu Arg			
	165	170	175			
Ser Gly Lys Ala	Leu Val Arg Ile	Arg Gln Thr Gly	Lys Asn Ser Gly			
	180	185	190			
Thr Ile Asp Asn	Thr Gly Gly Thr	His Thr Ala Asp	Leu Ser Arg Phe			
	195	200	205			
Pro Ile Thr Ala	Arg Thr Thr Ala	Ile Lys Gly Arg	Phe Glu Gly Ser			
	210	215	220			
Arg Phe Leu Pro	Tyr His Thr Arg	Asn Gln Ile Asn	Gly Gly Ala Leu			
	225	230	235			240
Asp Gly Lys Ala	Pro Ile Leu Gly	Tyr Ala Glu Asp	Pro Val Glu Leu			
	245	250	255			
Phe Phe Met His	Ile Gln Gly Ser	Gly Arg Leu Lys	Thr Pro Ser Gly			
	260	265	270			
Lys Tyr Ile Arg	Ile Gly Tyr Ala	Asp Lys Asn Glu	His Pro Tyr Val			
	275	280	285			
Ser Ile Gly Arg	Tyr Met Ala Asp	Lys Gly Tyr Leu	Lys Leu Gly Gln			
	290	295	300			
Thr Ser Met Gln	Gly Ile Lys Ser	Tyr Met Arg Gln	Asn Pro Gln Arg			
	305	310	315			320
Leu Ala Glu Val	Leu Gly Gln Asn	Pro Ser Tyr Ile	Phe Phe Arg Glu			
	325	330	335			
Leu Ala Gly Ser	Ser Asn Asp Gly	Pro Val Gly Ala	Leu Gly Thr Pro			
	340	345	350			
Leu Met Gly Glu	Tyr Ala Gly Ala	Val Asp Arg His	Tyr Ile Thr Leu			
	355	360	365			
Gly Ala Pro Leu	Phe Val Ala Thr	Ala His Pro Val	Thr Arg Lys Ala			
	370	375	380			
Leu Asn Arg Leu	Ile Met Ala Gln	Asp Thr Gly Ser	Ala Ile Lys Gly			
	385	390	395			400
Ala Val Arg Val	Asp Tyr Phe Trp	Gly Tyr Gly Asp	Glu Ala Gly Glu			
	405	410	415			
Leu Ala Gly Lys	Gln Lys Thr Thr	Gly Tyr Val Trp	Gln Leu Leu Pro			
	420	425	430			
Asn Gly Met Lys	Pro Glu Tyr Arg	Pro				
	435	440				

<210> 3230
<211> 441
<212> PRT
<213> *Neisseria meningitidis*

<400> 3230

Met	Lys	Lys	Tyr	Leu	Phe	Arg	Ala	Ala	Leu	Cys	Gly	Ile	Ala	Ala	Ala	
1				5					10					15		
Ile	Leu	Ala	Ala	Cys	Gln	Ser	Lys	Ser	Ile	Gln	Thr	Phe	Pro	Gln	Pro	
		20						25					30			
Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Val	Gly	Ile	Pro	Asp	
		35					40					45				
Pro	Ala	Gly	Thr	Thr	Val	Gly	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val	
	50					55					60					
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser	
	65				70					75					80	
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly	
				85					90					95		
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Val	
			100					105					110			
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala	
		115					120					125				
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val	
	130					135					140					
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr	
	145				150					155					160	
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg	
			165						170					175		
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly	
			180					185					190			
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Gln	Phe	
		195					200					205				
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser	
	210					215					220					
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu	
	225				230					235					240	
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu	
			245						250					255		
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	
			260					265					270			

Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ala Tyr Met Gln Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Thr Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3231
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3231
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15
 Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30
 Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45
 Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60
 Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80
 Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
 85 90 95

Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe		
			100					105					110				
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala		
		115					120					125					
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val		
		130				135					140						
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr		
145					150					155					160		
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg		
				165					170						175		
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly		
			180					185					190				
Thr	Ile	Asp	Asn	Ala	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe		
		195					200					205					
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser		
		210				215					220						
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu		
225					230				235						240		
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu		
				245					250					255			
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly		
			260					265						270			
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val		
		275					280					285					
Ser	Ile	Gly	Lys	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln		
		290				295					300						
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ser	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg		
305					310					315					320		
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu		
				325					330					335			
Leu	Ala	Gly	Ser	Ser	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro		
			340					345					350				
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Val	Asp	Arg	His	Tyr	Ile	Thr	Leu		
		355				360						365					
Gly	Ala	Pro	Leu	Phe	Val	Ala	Thr	Ala	His	Pro	Val	Thr	Ser	Lys	Ala		
		370				375					380						
Leu	Asn	Arg	Leu	Ile	Met	Ala	Gln	Asp	Thr	Gly	Ser	Ala	Ile	Lys	Gly		
385					390					395					400		

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Thr Ala Gly Lys Met Lys Glu Pro Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3232

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3232

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Ala
35 40 45

Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Gln Phe
195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser

210	215	220
Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu		
225	230	235 240
Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu		
	245	250 255
Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly		
	260	265 270
Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val		
	275	280 285
Ser Ile Gly Lys Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln		
	290	295 300
Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg		
305	310	315 320
Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu		
	325	330 335
Leu Thr Gly Ser Gly Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro		
	340	345 350
Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu		
	355	360 365
Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala		
	370	375 380
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly		
385	390	395 400
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu		
	405	410 415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro		
	420	425 430
Asn Gly Met Lys Pro Glu Tyr Arg Pro		
	435	440

<210> 3233
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3233
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala
 1 5 10 15
 Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30

Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Val	Gly	Ile	Pro	Ala	35	40	45	
Pro	Ala	Gly	Thr	Thr	Val	Ala	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val	50	55	60	
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser	65	70	75	80
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly	85	90	95	
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe	100	105	110	
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala	115	120	125	
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val	130	135	140	
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr	145	150	155	160
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg	165	170	175	
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly	180	185	190	
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Gln	Phe	195	200	205	
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser	210	215	220	
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu	225	230	235	240
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu	245	250	255	
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	260	265	270	
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val	275	280	285	
Ser	Ile	Gly	Lys	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln	290	295	300	
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ser	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg	305	310	315	320
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu	325	330	335	

Leu Thr Gly Ser Gly Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3234
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3234
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15
 Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30
 Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45
 Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60
 Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80
 Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
 85 90 95
 Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Val
 100 105 110
 Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
 115 120 125
 Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
 130 135 140
 Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
 145 150 155 160

Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg		
				165					170					175			
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly		
			180					185					190				
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Gln	Phe		
		195					200					205					
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser		
	210					215					220						
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu		
225					230					235					240		
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu		
				245					250					255			
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly		
			260					265					270				
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val		
	275						280					285					
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln		
	290					295					300						
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ala	Tyr	Met	Gln	Gln	Asn	Pro	Gln	Arg		
305					310					315					320		
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu		
				325					330					335			
Leu	Thr	Gly	Ser	Ser	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro		
			340					345					350				
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Val	Asp	Arg	His	Tyr	Ile	Thr	Leu		
	355					360					365						
Gly	Ala	Pro	Leu	Phe	Val	Ala	Thr	Ala	His	Pro	Val	Thr	Arg	Lys	Ala		
	370					375					380						
Leu	Asn	Arg	Leu	Ile	Met	Ala	Gln	Asp	Thr	Gly	Ser	Ala	Ile	Lys	Gly		
385					390					395				400			
Ala	Val	Arg	Val	Asp	Tyr	Phe	Trp	Gly	Tyr	Gly	Asp	Glu	Ala	Gly	Glu		
				405					410					415			
Leu	Ala	Gly	Lys	Gln	Lys	Thr	Thr	Gly	Tyr	Val	Trp	Gln	Leu	Leu	Pro		
			420					425					430				
Asn	Gly	Met	Lys	Pro	Glu	Tyr	Arg	Pro									
	435						440										

<210> 3235

<211> 441
<212> PRT
<213> Neisseria meningitidis

<400> 3235

Met	Lys	Lys	Tyr	Leu	Phe	Arg	Ala	Ala	Leu	Tyr	Gly	Ile	Ser	Ala	Ala	
1				5					10					15		
Ile	Leu	Ala	Ala	Cys	Gln	Ser	Lys	Ser	Ile	Gln	Thr	Phe	Pro	Gln	Pro	
			20					25					30			
Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Ala	Gly	Ile	Pro	Asp	
		35					40					45				
Pro	Ala	Gly	Thr	Thr	Val	Ala	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val	
	50					55					60					
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser	
65					70					75					80	
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly	
				85					90					95		
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe	
			100					105					110			
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala	
	115						120					125				
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val	
	130					135					140					
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr	
145					150					155					160	
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg	
				165					170					175		
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly	
			180					185					190			
Thr	Ile	Asp	Asn	Ala	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe	
	195						200					205				
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser	
	210					215					220					
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu	
225					230					235					240	
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu	
			245						250					255		
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	
		260						265					270			
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val	

275 280 285
 Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Thr Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Thr Ala Gly Lys Met Lys Glu Pro Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3236
 <211> 441
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 3236
 Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala
 1 5 10 15
 Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30
 Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
 35 40 45
 Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
 50 55 60
 Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
 65 70 75 80
 Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
 85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
 100 105 110
 Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
 115 120 125
 Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
 130 135 140
 Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
 145 150 155 160
 Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
 165 170 175
 Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
 180 185 190
 Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Gln Phe
 195 200 205
 Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220
 Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240
 Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255
 Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270
 Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ala Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Ala Gly Ser Ser Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3237

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3237

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Cys Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
35 40 45

Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110

Gln Ala Lys Gln Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125

Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140

Leu Lys Gly Asp Asp Arg Arg Thr Ala Gln Ala Arg Phe Pro Ile Tyr
145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
165 170 175

Ser Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
180 185 190

Thr Ile Asp Asn Thr Gly Gly Thr His Thr Ala Asp Leu Ser Gln Phe
195 200 205

Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
210 215 220

Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240
 Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255
 Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270
 Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Thr Gly Ser Gly Asn Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Thr His Pro Ile Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3238

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3238

Met Lys Lys His Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
 1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
 20 25 30

Asp Thr Ser Ile Ile Lys Gly Pro Asp Arg Pro Ala Gly Ile Pro Asp

35					40					45					
Pro	Ala	Gly	Thr	Thr	Val	Gly	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val
50						55					60				
Pro	His	Leu	Ser	Leu	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser
65					70					75					80
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly
				85					90					95	
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Val	His	Ser	Phe
			100					105					110		
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala
		115					120					125			
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val
	130					135					140				
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr
145					150					155					160
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg
				165					170					175	
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly
			180					185					190		
Thr	Ile	Asp	Asn	Ala	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe
		195					200					205			
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser
	210					215					220				
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu
225					230					235					240
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu
				245					250					255	
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly
			260					265					270		
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val
		275					280					285			
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln
	290					295					300				
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ala	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg
305					310					315					320
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Val	Phe	Phe	Arg	Glu
				325					330					335	
Leu	Ala	Gly	Ser	Gly	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro

340	345	350
Leu Met Gly Glu Tyr Ala Gly Ala Val Asp Arg His Tyr Ile Thr Leu		
355	360	365
Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala		
370	375	380
Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly		
385	390	395
Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu		
405	410	415
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro		
420	425	430
Asn Gly Met Lys Pro Glu Tyr Arg Pro		
435	440	

<210> 3239
 <211> 441
 <212> PRT
 <213> Neisseria meningitidis

<400> 3239
Met Lys Lys His Leu Leu Arg Ser Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15
Ile Leu Ala Ala Cys Gln Ser Arg Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30
Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Ala Gly Ile Pro Asp
35 40 45
Pro Ala Gly Thr Thr Val Ala Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60
Pro His Leu Ser Met Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80
Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95
Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe
100 105 110
Gln Ala Lys Arg Phe Phe Glu Arg Tyr Phe Thr Pro Trp Gln Val Ala
115 120 125
Gly Asn Gly Ser Leu Ala Gly Thr Val Thr Gly Tyr Tyr Glu Pro Val
130 135 140
Leu Lys Gly Asp Gly Arg Arg Thr Glu Arg Ala Arg Phe Pro Ile Tyr
145 150 155 160

Gly Ile Pro Asp Asp Phe Ile Ser Val Pro Leu Pro Ala Gly Leu Arg
 165 170 175
 Gly Gly Lys Ala Leu Val Arg Ile Arg Gln Thr Gly Lys Asn Ser Gly
 180 185 190
 Thr Ile Asp Asn Ala Gly Gly Thr His Thr Ala Asp Leu Ser Arg Phe
 195 200 205
 Pro Ile Thr Ala Arg Thr Thr Ala Ile Lys Gly Arg Phe Glu Gly Ser
 210 215 220
 Arg Phe Leu Pro Tyr His Thr Arg Asn Gln Ile Asn Gly Gly Ala Leu
 225 230 235 240
 Asp Gly Lys Ala Pro Ile Leu Gly Tyr Ala Glu Asp Pro Val Glu Leu
 245 250 255
 Phe Phe Met His Ile Gln Gly Ser Gly Arg Leu Lys Thr Pro Ser Gly
 260 265 270
 Lys Tyr Ile Arg Ile Gly Tyr Ala Asp Lys Asn Glu His Pro Tyr Val
 275 280 285
 Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
 290 295 300
 Thr Ser Met Gln Gly Ile Lys Ala Tyr Met Arg Gln Asn Pro Gln Arg
 305 310 315 320
 Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
 325 330 335
 Leu Ala Gly Ser Gly Gly Asp Gly Pro Val Gly Ala Leu Gly Thr Pro
 340 345 350
 Leu Met Gly Gly Tyr Ala Gly Ala Ile Asp Arg His Tyr Ile Thr Leu
 355 360 365
 Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
 370 375 380
 Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
 385 390 395 400
 Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
 405 410 415
 Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
 420 425 430
 Asn Gly Met Lys Pro Glu Tyr Arg Pro
 435 440

<210> 3240

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3240

Met	Lys	Lys	His	Leu	Leu	Arg	Ser	Ala	Leu	Tyr	Gly	Ile	Ala	Ala	Ala	
1				5					10					15		
Ile	Leu	Ala	Ala	Cys	Gln	Ser	Arg	Ser	Ile	Gln	Thr	Phe	Pro	Gln	Pro	
			20					25					30			
Asp	Thr	Ser	Val	Ile	Asn	Gly	Pro	Asp	Arg	Pro	Ala	Gly	Ile	Pro	Asp	
		35					40					45				
Pro	Ala	Gly	Thr	Thr	Val	Ala	Gly	Gly	Gly	Ala	Val	Tyr	Thr	Val	Val	
	50					55					60					
Pro	His	Leu	Ser	Met	Pro	His	Trp	Ala	Ala	Gln	Asp	Phe	Ala	Lys	Ser	
65					70					75					80	
Leu	Gln	Ser	Phe	Arg	Leu	Gly	Cys	Ala	Asn	Leu	Lys	Asn	Arg	Gln	Gly	
				85					90					95		
Trp	Gln	Asp	Val	Cys	Ala	Gln	Ala	Phe	Gln	Thr	Pro	Ile	His	Ser	Phe	
			100					105					110			
Gln	Ala	Lys	Arg	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala	
		115					120					125				
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val	
	130					135					140					
Leu	Lys	Gly	Asp	Gly	Arg	Arg	Thr	Glu	Arg	Ala	Arg	Phe	Pro	Ile	Tyr	
145					150					155					160	
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg	
				165					170					175		
Gly	Gly	Lys	Asn	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly	
			180					185					190			
Thr	Ile	Asp	Asn	Ala	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe	
		195					200					205				
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser	
	210					215					220					
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu	
225					230					235					240	
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu	
				245					250					255		
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly	
			260					265					270			
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val	
		275					280					285				

Ser Ile Gly Arg Tyr Met Ala Asp Lys Gly Tyr Leu Lys Leu Gly Gln
290 295 300

Thr Ser Met Gln Gly Ile Lys Ser Tyr Met Arg Gln Asn Pro His Lys
305 310 315 320

Leu Ala Glu Val Leu Gly Gln Asn Pro Ser Tyr Ile Phe Phe Arg Glu
325 330 335

Leu Ala Gly Ser Gly Asn Glu Gly Pro Val Gly Ala Leu Gly Thr Pro
340 345 350

Leu Met Gly Glu Tyr Ala Gly Ala Ile Asp Arg His Tyr Ile Thr Leu
355 360 365

Gly Ala Pro Leu Phe Val Ala Thr Ala His Pro Val Thr Arg Lys Ala
370 375 380

Leu Asn Arg Leu Ile Met Ala Gln Asp Thr Gly Ser Ala Ile Lys Gly
385 390 395 400

Ala Val Arg Val Asp Tyr Phe Trp Gly Tyr Gly Asp Glu Ala Gly Glu
405 410 415

Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3241

<211> 441

<212> PRT

<213> Neisseria meningitidis

<400> 3241

Met Lys Lys Tyr Leu Phe Arg Ala Ala Leu Tyr Gly Ile Ala Ala Ala
1 5 10 15

Ile Leu Ala Ala Cys Gln Ser Lys Ser Ile Gln Thr Phe Pro Gln Pro
20 25 30

Asp Thr Ser Val Ile Asn Gly Pro Asp Arg Pro Val Gly Ile Pro Asp
35 40 45

Pro Ala Gly Thr Thr Val Gly Gly Gly Gly Ala Val Tyr Thr Val Val
50 55 60

Pro His Leu Ser Leu Pro His Trp Ala Ala Gln Asp Phe Ala Lys Ser
65 70 75 80

Leu Gln Ser Phe Arg Leu Gly Cys Ala Asn Leu Lys Asn Arg Gln Gly
85 90 95

Trp Gln Asp Val Cys Ala Gln Ala Phe Gln Thr Pro Val His Ser Phe

100					105					110					
Gln	Ala	Lys	Gln	Phe	Phe	Glu	Arg	Tyr	Phe	Thr	Pro	Trp	Gln	Val	Ala
		115					120					125			
Gly	Asn	Gly	Ser	Leu	Ala	Gly	Thr	Val	Thr	Gly	Tyr	Tyr	Glu	Pro	Val
		130				135					140				
Leu	Lys	Gly	Asp	Asp	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Phe	Pro	Ile	Tyr
145					150					155					160
Gly	Ile	Pro	Asp	Asp	Phe	Ile	Ser	Val	Pro	Leu	Pro	Ala	Gly	Leu	Arg
				165					170					175	
Ser	Gly	Lys	Ala	Leu	Val	Arg	Ile	Arg	Gln	Thr	Gly	Lys	Asn	Ser	Gly
			180					185					190		
Thr	Ile	Asp	Asn	Thr	Gly	Gly	Thr	His	Thr	Ala	Asp	Leu	Ser	Arg	Phe
		195					200					205			
Pro	Ile	Thr	Ala	Arg	Thr	Thr	Ala	Ile	Lys	Gly	Arg	Phe	Glu	Gly	Ser
		210				215					220				
Arg	Phe	Leu	Pro	Tyr	His	Thr	Arg	Asn	Gln	Ile	Asn	Gly	Gly	Ala	Leu
225					230					235					240
Asp	Gly	Lys	Ala	Pro	Ile	Leu	Gly	Tyr	Ala	Glu	Asp	Pro	Val	Glu	Leu
				245					250					255	
Phe	Phe	Met	His	Ile	Gln	Gly	Ser	Gly	Arg	Leu	Lys	Thr	Pro	Ser	Gly
			260					265					270		
Lys	Tyr	Ile	Arg	Ile	Gly	Tyr	Ala	Asp	Lys	Asn	Glu	His	Pro	Tyr	Val
		275					280					285			
Ser	Ile	Gly	Arg	Tyr	Met	Ala	Asp	Lys	Gly	Tyr	Leu	Lys	Leu	Gly	Gln
		290				295					300				
Thr	Ser	Met	Gln	Gly	Ile	Lys	Ala	Tyr	Met	Arg	Gln	Asn	Pro	Gln	Arg
305					310					315					320
Leu	Ala	Glu	Val	Leu	Gly	Gln	Asn	Pro	Ser	Tyr	Ile	Phe	Phe	Arg	Glu
				325					330					335	
Leu	Ala	Gly	Ser	Ser	Asn	Asp	Gly	Pro	Val	Gly	Ala	Leu	Gly	Thr	Pro
			340					345					350		
Leu	Met	Gly	Glu	Tyr	Ala	Gly	Ala	Val	Asp	Arg	His	Tyr	Ile	Thr	Leu
		355					360					365			
Gly	Ala	Pro	Leu	Phe	Val	Ala	Thr	Ala	His	Pro	Val	Thr	Arg	Lys	Ala
		370				375					380				
Leu	Asn	Arg	Leu	Ile	Met	Ala	Gln	Asp	Thr	Gly	Ser	Ala	Ile	Lys	Gly
385					390					395					400
Ala	Val	Arg	Val	Asp	Tyr	Phe	Trp	Gly	Tyr	Gly	Asp	Glu	Ala	Gly	Glu

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405
Leu Ala Gly Lys Gln Lys Thr Thr Gly Tyr Val Trp Gln Leu Leu Pro
420 425 430

Asn Gly Met Lys Pro Glu Tyr Arg Pro
435 440

<210> 3242
<211> 215
<212> PRT
<213> Neisseria meningitidis

<400> 3242
Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

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<210> 3243
<211> 582
<212> DNA
<213> *Neisseria meningitidis*

<400> 3243
atgaaacaca ctgtatccgc atcgggtcatc ctgcttttga ccgcttgccg gcaattacct 60
caaaataacg aaaacctgtg gcagccgtcc gaacacaccc gcagtttcac ggcggaagg 120
cggttgagcag tgaagcgga agggaaaggt tcgtatgcaa atttcgattg gacataccaa 180
ccgcccgtgg aaaccatcaa tatcaacacc cctttgggca gtacgctcgg gcagttgtgt 240
caagacaggg acggcgcatt ggcagtggac ggcaaaggaa atgtctatca ggcggaagt 300
gcggaagaat tgagcaggca gctggtcggg ttcaaactgc caatccaata tctgcatatc 360
tgggcagatg gcaggcctgt ggcgggcgcg ccttaccgca tcctgccgga cggcatattg 420
gaacaatacg gttggactgt cggcagaacc gccgacagtg gggggcaagt ccgaacgttg 480
caactgaata acggaaattt gaacatcagg ctggttttca ccgagattgg tatgccgtct 540
gaaaccgaaa cccaagaaca atgcgcggca cgcatacagt aa 582

<210> 3244
<211> 351
<212> PRT
<213> *Neisseria meningitidis*

<400> 3244
Val Pro Pro Val Gln Ser Ala Pro Val Tyr Thr Pro Pro Ala Tyr Val
1 5 10 15
Pro Pro Ser Ala Pro Ala Val Ser Gly Thr Tyr Val Pro Ser Tyr Ala
20 25 30
Pro Val Asp Ile Asn Ala Ala Thr His Thr Ile Val Arg Gly Asp Thr
35 40 45
Val Tyr Asn Ile Ser Lys Arg Tyr His Ile Ser Gln Asp Asp Phe Arg
50 55 60
Ala Trp Asn Gly Met Thr Asp Asn Thr Leu Ser Ile Gly Gln Ile Val
65 70 75 80
Lys Val Lys Pro Ala Gly Tyr Ala Ala Pro Lys Ala Ala Ala Val Lys
85 90 95
Ser Arg Pro Ala Val Pro Ala Ala Ala Gln Pro Pro Val Gln Ser Ala
100 105 110
Pro Val Asp Ile Asn Ala Ala Thr His Thr Ile Val Arg Gly Asp Thr
115 120 125
Val Tyr Asn Ile Ser Lys Arg Tyr His Ile Ser Gln Asp Asp Phe Arg
130 135 140
Ala Trp Asn Gly Met Thr Asp Asn Met Leu Ser Ile Gly Gln Ile Val
145 150 155 160
Lys Val Lys Pro Ala Gly Tyr Ala Ala Pro Lys Thr Ala Ala Val Glu
165 170 175

Ser Arg Pro Ala Val Pro Ala Ala Val Gln Thr Pro Val Lys Pro Ala
 180 185 190
 Ala Gln Pro Pro Val Gln Ser Ala Pro Gln Pro Ala Ala Pro Ala Ala
 195 200 205
 Glu Asn Lys Ala Val Pro Ala Pro Ala Pro Gln Ser Pro Ala Ala Ser
 210 215 220
 Pro Ser Gly Thr Arg Ser Val Gly Gly Ile Val Trp Gln Arg Pro Thr
 225 230 235 240
 Gln Gly Lys Val Val Ala Asp Phe Gly Gly Asn Asn Lys Gly Val Asp
 245 250 255
 Ile Ala Gly Asn Ala Gly Gln Pro Val Leu Ala Ala Ala Asp Gly Lys
 260 265 270
 Val Val Tyr Ala Gly Ser Gly Leu Arg Gly Tyr Gly Asn Leu Val Ile
 275 280 285
 Ile Gln His Asn Ser Ser Phe Leu Thr Ala Tyr Gly His Asn Gln Lys
 290 295 300
 Leu Leu Val Gly Glu Gly Gln Gln Val Lys Arg Gly Gln Gln Val Ala
 305 310 315 320
 Leu Met Gly Asn Thr Asp Ala Ser Arg Thr Gln Leu His Phe Glu Val
 325 330 335
 Arg Gln Asn Gly Lys Pro Val Asn Pro Asn Ser Tyr Ile Ala Phe
 340 345 350

<210> 3245

<211> 1248

<212> DNA

<213> *Neisseria meningitidis*

<400> 3245

atgttgacac caacaacact ttaggtagct tgtaccgccc ttgccgctca gttgggcgga 60
 tgccccaccc aacacccttc tctgtgcatt gcaggcaatt caggtatgca gaccgtaccg 120
 tctgcgcgcyg tttacaatcc ttatggcgca acgccgtaca atgccgctcc tgccgccaac 180
 gatgcgcgcyg atgtgcgcgc ggtgcaaagc gcgcgcggtt atangcctcc tgcttatggt 240
 ccgcgcgtctg cacctgcgcyg ttgcgggtaca tacgttcctt cttacgcanc cgtcgacatc 300
 aacgcgcgcga ccatactat tgtgcgcggc gacaccgtgt acaagatttc caaatgctac 360
 catatctctc aagacgattt ccgtgcggtg aacggcatga ccgacaatac gttgagcatc 420
 ggtcagattg ttaaagtcaa accggcagga tatgccgcac cgaaagccgc agccgtaaaa 480
 agcaggcccg ccgtaccggc tgccgcgcga ccgctcgtac agtcgcgacc cgtcgacatc 540
 aacgcgcgcga cgcatactat tgtgcgcggc gacacggtgt acaacatttc caaacgctac 600
 catatctctc aagacgattt ccgtgcggtg aacggcatga ccgacaatac gttgagcatc 660
 ggtcagattg ttaaagtcaa accggcagga tatgccgcac cgaaagccgc agccgtaaaa 720
 agcaggcccg ccgtaccggc tgccgtgcaa acccctgtga aaccgcgcgc gcaaccgcct 780
 gtgcagtcgg cgccgcaacc tgccgcgcgc gctgcggaat ataaagcggg tcccgcgcgc 840
 gccccgcaat ctccctgcgc ttgcgcttcc ggacgcggtt cggtcggcgg cattgtttgg 900
 cagcgtccga cgcaaggtaa agtggttgcc gatttcggcg gcaacaacaa ggggtgctgat 960

attgcaggaa atgcgggaca gcccgttttg gcggcggtg acggcaaagt ggtttatgca 1020
 ggttcgggtt tgaggggata cggcaatttg gtcacatcc agcataattc ttccttctg 1080
 accgcatacg ggcacaacca aaaattgctg gtcggcggaag gccagcaggt caaacgcggg 1140
 cagcaggtcg ctttgatggg caataccgag gcttctagaa cgcagcttca tttcgaggtg 1200
 cggcaaaacg gcaaaccggt taatccgaac agctatatcg cgttctga 1248

<210> 3246

<211> 414

<212> PRT

<213> Neisseria meningitidis

<400> 3246

Met Leu Thr Pro Thr Thr Leu Val Ala Cys Thr Ala Leu Ala Ala Gln
 1 5 10 15

Leu Gly Gly Cys Pro Thr Gln His Pro Ser Pro Val Ile Ala Gly Asn
 20 25 30

Ser Gly Met Gln Thr Val Pro Ser Ala Pro Val Tyr Asn Pro Tyr Gly
 35 40 45

Ala Thr Pro Tyr Asn Ala Ala Pro Ala Ala Asn Asp Ala Pro Tyr Val
 50 55 60

Pro Pro Val Gln Ser Ala Pro Val Tyr Xaa Pro Pro Ala Tyr Val Pro
 65 70 75 80

Pro Ser Ala Pro Ala Val Ser Gly Thr Tyr Val Pro Ser Tyr Ala Xaa
 85 90 95

Val Asp Ile Asn Ala Ala Thr His Thr Ile Val Arg Gly Asp Thr Val
 100 105 110

Tyr Lys Ile Ser Lys Cys Tyr His Ile Ser Gln Asp Asp Phe Arg Ala
 115 120 125

Trp Asn Gly Met Thr Asp Asn Thr Leu Ser Ile Gly Gln Ile Val Lys
 130 135 140

Val Lys Pro Ala Gly Tyr Ala Ala Pro Lys Ala Ala Ala Val Lys Ser
 145 150 155 160

Arg Pro Ala Val Pro Ala Ala Ala Gln Pro Leu Val Gln Ser Ala Pro
 165 170 175

Val Asp Ile Asn Ala Ala Thr His Thr Ile Val Arg Gly Asp Thr Val
 180 185 190

Tyr Asn Ile Ser Lys Arg Tyr His Ile Ser Gln Asp Asp Phe Arg Ala
 195 200 205

Trp Asn Gly Met Thr Asp Asn Thr Leu Ser Ile Gly Gln Ile Val Lys
 210 215 220

Val Lys Pro Ala Gly Tyr Ala Ala Pro Lys Ala Ala Ala Val Lys Ser
 225 230 235 240

Arg Pro Ala Val Pro Ala Ala Val Gln Thr Pro Val Lys Pro Ala Ala
 245 250 255
 Gln Pro Pro Val Gln Ser Ala Pro Gln Pro Ala Ala Pro Ala Ala Glu
 260 265 270
 Asn Lys Ala Val Pro Ala Pro Ala Pro Gln Ser Pro Ala Ala Ser Pro
 275 280 285
 Ser Gly Thr Arg Ser Val Gly Gly Ile Val Trp Gln Arg Pro Thr Gln
 290 295 300
 Gly Lys Val Val Ala Asp Phe Gly Gly Asn Asn Lys Gly Val Asp Ile
 305 310 315 320
 Ala Gly Asn Ala Gly Gln Pro Val Leu Ala Ala Ala Asp Gly Lys Val
 325 330 335
 Val Tyr Ala Gly Ser Gly Leu Arg Gly Tyr Gly Asn Leu Val Ile Ile
 340 345 350
 Gln His Asn Ser Ser Phe Leu Thr Ala Tyr Gly His Asn Gln Lys Leu
 355 360 365
 Leu Val Gly Glu Gly Gln Gln Val Lys Arg Gly Gln Gln Val Ala Leu
 370 375 380
 Met Gly Asn Thr Glu Ala Ser Arg Thr Gln Leu His Phe Glu Val Arg
 385 390 395 400
 Gln Asn Gly Lys Pro Val Asn Pro Asn Ser Tyr Ile Ala Phe
 405 410

<210> 3247

<211> 849

<212> DNA

<213> Neisseria gonorrhoeae

<400> 3247

atggtgtccc tccgcttcag attcggcaac cacttttaaac gccgacattc tgacaatttc 60
 cttttccgcc agccaaatat catgcgtatc tttcgggttcg ggcttgttgg gcatggcaac 120
 cttcaacagc cgcgccatca caggaatcgt cgttccctga atcagcagcg acagcaccac 180
 cacggcaaac gccacatcaa acagcaggtg cgaattggga acgcccacat ccagcggcat 240
 catcgccagc gaaatcggtg cggctcctcg caagcccaac caactgatat acgccttttc 300
 acgcaggctg taattgaatt tccacaaacc gccgaacact gccagcggac gcgcgaccag 360
 catcaggaac gccgcaatcg ccaaggcttc cgcgcctcg tccaacacgc cggcgggaga 420
 aaccagcaga ccgagcatga cgaacaaagt tgcttgcgac agccaagcca aaccgtccat 480
 cacacgcaaa acgtgtttccg tcgcacgggtt gcgctgggta ccgacaatga tgccggcaag 540
 gtaaacgccg aaaaagccgc tgccgcctat ggtattggta aacgcaaaca caagcagccc 600
 gcccgacaca atcatcagcg cgtacagacc ttccgtacac acctccaatt cccaatcaac 660
 gtcatagtctg tctcccggtg taaaatgttc ttcaattcag aatccccccc ttcttcccag 720
 ccgaaacct tcatgtgtta naccctgggg tgccccaacg gatttagtaa cctcccaatg 780
 actctgcttg tcgccccctt cgcccgttt ctccttccgg gaaaacttgt tgtccccgtc 840
 ttacattaa 849

<210> 3248

<211> 282

<212> PRT

<213> Neisseria gonorrhoeae

<400> 3248

Met Val Ser Leu Arg Phe Arg Phe Gly Asn His Phe Lys Arg Arg His
1 5 10 15

Ser Asp Asn Phe Leu Phe Arg Gln Pro Asn Ile Met Arg Ile Phe Arg
20 25 30

Phe Gly Leu Val Gly His Gly Asn Leu Gln Gln Pro Arg His His Arg
35 40 45

Asn Arg Arg Ser Leu Asn Gln Gln Arg Gln His His His Gly Lys Arg
50 55 60

His Ile Lys Gln Gln Val Arg Ile Gly Asn Ala His His Gln Arg His
65 70 75 80

His Arg Gln Arg Asn Arg Tyr Gly Ser Ser Gln Ala Gln Pro Thr Asp
85 90 95

Ile Arg Leu Phe Thr Gln Ala Val Ile Glu Phe Pro Gln Thr Ala Glu
100 105 110

His Cys Gln Arg Thr Arg Asp Gln His Gln Glu Arg Arg Asn Arg Gln
115 120 125

Gly Phe Arg Arg Pro Val Gln His Ala Gly Gly Arg Asn Gln Gln Thr
130 135 140

Glu His Asp Glu Gln Ser Cys Leu Arg Gln Pro Ser Gln Thr Val His
145 150 155 160

His Thr Gln Asn Val Phe Arg Arg Thr Val Ala Leu Val Thr Asp Asn
165 170 175

Asp Ala Gly Lys Val Asn Arg Gln Lys Ala Ala Ala Ala Tyr Gly Ile
180 185 190

Gly Lys Arg Lys His Lys Gln Pro Ala Arg His Asn His Gln Arg Val
195 200 205

Gln Thr Phe Arg Thr His Leu Gln Phe Pro Ile Asn Val Ile Ala Val
210 215 220

Ser Arg Val Lys Met Phe Phe Thr Ser Glu Ser Pro Pro Ser Ser Gln
225 230 235 240

Pro Glu Thr Phe Met Cys Xaa Thr Leu Gly Cys Pro Asn Gly Phe Ser
245 250 255

Asn Leu Pro Met Thr Leu Leu Val Ala Pro Phe Ala Arg Phe Leu Leu
260 265 270

Pro Gly Lys Leu Val Val Pro Val Leu His
275 280

<210> 3249
<211> 252
<212> DNA
<213> Neisseria meningitidis

<400> 3249
cgctgaagc acgggtgctgg actgcatttc tattcggtta tacgcctttt cagcgaggct 60
gtaattgaat ttccacaaac cgccgaacac tgccgacgga cgcgcgacca gcatcaggaa 120
cgccgcaatc gccaaggctt ccgcccgcct gtccaacacg ttggcaggag aaaccagcag 180
caaaggcatt cccaaacgtg cggacaaaagt ggtcgaaacc acgctcagaa acaacagtgc 240
gccacccggc ag 252

<210> 3250
<211> 84
<212> PRT
<213> Neisseria meningitidis

<400> 3250
Arg Leu Lys His Gly Val Gly Leu His Phe Tyr Ser Ala Ile Arg Leu
1 5 10 15
Phe Thr Gln Ala Val Ile Glu Phe Pro Gln Thr Ala Glu His Cys Arg
20 25 30
Arg Thr Arg Asp Gln His Gln Glu Arg Arg Asn Arg Gln Gly Phe Arg
35 40 45
Arg Pro Val Gln His Val Gly Arg Arg Asn Gln Gln Gln Arg His Ser
50 55 60
Gln Thr Cys Gly Gln Ser Gly Arg Asn His Ala Gln Lys Gln Gln Cys
65 70 75 80
Ala Thr Arg Gln

<210> 3251
<211> 213
<212> DNA
<213> Neisseria meningitidis

<400> 3251
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acgcgcgacc agcatcagga acgccgcaat cgccaaggct tccgccgccc cgtccaacac 120
gttggcagga gaaaccagca gcaaaggcat tcccaaacgt gcggacaaaag tggtcgaaac 180
cacgctcaga aacaacagtg cgccacccgg cag 213

<210> 3252
<211> 71

<212> PRT
<213> Neisseria meningitidis

<400> 3252
Ile Arg Leu Phe Thr Gln Ala Val Ile Glu Phe Pro Gln Thr Ala Glu
1 5 10 15
His Cys Arg Arg Thr Arg Asp Gln His Gln Glu Arg Arg Asn Arg Gln
20 25 30
Gly Phe Arg Arg Pro Val Gln His Val Gly Arg Arg Asn Gln Gln Gln
35 40 45
Arg His Ser Gln Thr Cys Gly Gln Ser Gly Arg Asn His Ala Gln Lys
50 55 60
Gln Gln Cys Ala Thr Arg Gln
65 70

<210> 3253
<211> 771
<212> DNA
<213> Neisseria gonorrhoeae

<400> 3253
atgcggcgaa acgtgcctgc cgctgccgta ttgcgcgcgc cacgattcga ggcgtttttg 60
gatttggcgt tggctcaggc gcgtgccgtt cctgccggta aacagggctt tgccgtccga 120
tgccgtctga cgcagcggca gatagttttt caaggtcttc acgtttttgc cggtcagcgg 180
aacctgacgc tgcttgcgcc ctttgccggt aacgtgtacc cacgtttcgt ccaaataac 240
atcatctgca ttcaagccgt gtatctcgct cacgcgcaaa ccgtgccgt acatcagctc 300
gaacagcgcg tggtcgcgca ccgccagcgg gtcgccgcgc tccacgggca aatccaacat 360
ccggttcagc cattcctgcg gcagggtttt gggtagcgcg tcgggctgct tcggcgggtt 420
gatgtcggcg gtcgggtcgg cgcgcatcag cccgcgtttg accagccagg cgcaatactg 480
ccgccacgcc gacagcttgc gcgccagcgt ccgaccgtcc aaaccgcgct gcgacagccg 540
ccgcaacgcc gccgtaaaat cgcgccgcga caagtcctgc ggcacgccgc ctgcatcttc 600
agacggcatt tgtccaaca gtgcaaacag ttcttccaaa tcgcgcgcgt atgccgcaac 660
cgtgtgctcc gacttgccct cgcgcacgat gttttccaaa taagcgtcaa aatacgccgc 720
aaaccggtcc aaaaccataa ccgtcccaca caaatatcaa aaaaccagt a 771

<210> 3254
<211> 256
<212> PRT
<213> Neisseria gonorrhoeae

<400> 3254
Met Arg Arg Asn Val Pro Ala Val Ala Val Leu Arg Arg Pro Arg Phe
1 5 10 15
Glu Ala Phe Leu Asp Leu Ala Leu Ala Gln Ala Arg Ala Val Pro Ala
20 25 30
Gly Lys Gln Gly Phe Ala Val Arg Cys Arg Leu Thr Gln Arg Gln Ile
35 40 45
Val Phe Gln Gly Phe His Ala Phe Ala Gly Gln Arg Asn Leu Thr Leu

50

55

60

Leu Ala Pro Phe Ala Gly Asn Val Tyr Pro Arg Phe Val Gln Ile Tyr
65 70 75 80

Ile Ile Cys Ile Gln Ala Val Tyr Leu Ala His Ala Gln Thr Ala Ala
85 90 95

Val His Gln Leu Glu Gln Arg Val Val Ala His Arg Gln Arg Val Ala
100 105 110

Ala Val His Gly Gln Ile Gln His Pro Val Gln Pro Phe Leu Arg Gln
115 120 125

Gly Phe Gly Tyr Ala Leu Gly Leu Leu Arg Arg Phe Asp Val Gly Gly
130 135 140

Arg Val Gly Ala His Gln Pro Ala Phe Asp Gln Pro Gly Ala Ile Leu
145 150 155 160

Pro Pro Arg Arg Gln Leu Ala Arg Gln Arg Pro Thr Val Gln Thr Ala
165 170 175

Leu Arg Gln Pro Pro Gln Arg Arg Arg Lys Ile Ala Pro Arg Gln Val
180 185 190

Leu Arg His Ala Ala Cys Ile Phe Arg Arg His Leu Cys Gln Gln Cys
195 200 205

Lys Gln Phe Phe Gln Ile Ala Pro Val Cys Arg Asn Arg Val Leu Arg
210 215 220

Leu Ala Leu Ala His Asp Val Phe Gln Ile Ser Val Lys Ile Arg Arg
225 230 235 240

Lys Pro Val Gln Asn His Asn Arg Pro Thr Gln Ile Ser Lys Asn Gln
245 250 255

<210> 3255

<211> 527

<212> DNA

<213> Neisseria meningitidis

<400> 3255

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gatttgccgt tggctcaggc gcgtgccgtt cctgccggtta aacagggcgt tgccgtccga 120
tgccgtctga cgcagcggca gatagttttt cagggcttcc acgcttttgc cgaccagcgg 180
cacctgccgc tgttgccgcc tttgccgata acgtgtaccc acgcytcgtc caaatagaca 240
tcattctgcat tcaagccgtg tatctcgctc acgcgcaaac cgctgccgta catcagttcg 300
aacagggcgt ggtcgcgcac cgccagcggg tcgccgccgt ccacgggcaa atccagcatc 360
cggttcagcc attcctgcgg cagggctttg ggtacgcgct cgggctgctt cggcggtttg 420
atgtcggcgg tcgggtcggc gtgcatcagg ccgcgcttta ccagccaaac gcaatactgc 480

cgccaagacg aaagcttgcg agccagcgtc cgttccccca aaccgcg

527

<210> 3256

<211> 176

<212> PRT

<213> *Neisseria meningitidis*

<400> 3256

Met Arg Arg Asn Val Xaa Ala Val Ala Val Xaa Arg Arg Pro Leu Arg
1 5 10 15

Gln Thr Phe Leu Asp Leu Ala Leu Ala Gln Ala Arg Ala Val Pro Ala
20 25 30

Gly Lys Gln Gly Phe Ala Val Arg Cys Arg Leu Thr Gln Arg Gln Ile
35 40 45

Val Phe Gln Gly Phe His Ala Phe Ala Asp Gln Arg His Leu Pro Leu
50 55 60

Xaa Ala Pro Phe Ala Asp Asn Val Tyr Pro Arg Xaa Val Gln Ile Asp
65 70 75 80

Ile Ile Cys Ile Gln Ala Val Tyr Leu Ala His Ala Gln Thr Ala Ala
85 90 95

Val His Gln Phe Glu Gln Gly Val Val Ala His Arg Gln Arg Val Ala
100 105 110

Ala Val His Gly Gln Ile Gln His Pro Val Gln Pro Phe Leu Arg Gln
115 120 125

Gly Phe Gly Tyr Ala Leu Gly Leu Leu Arg Arg Phe Asp Val Gly Gly
130 135 140

Arg Val Gly Val His Gln Ala Ala Leu Tyr Gln Pro Asn Ala Ile Leu
145 150 155 160

Pro Pro Arg Arg Lys Leu Ala Ser Gln Arg Pro Phe Pro Gln Thr Ala
165 170 175

<210> 3257

<211> 771

<212> DNA

<213> *Neisseria meningitidis*

<400> 3257

atgcggcgaa acgtgcctgc cgtcgccggtt ttgcgcgcgcc cattgcgcca aacgtttttg 60
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tgccgtctga cgcagcggca gatagttttt cagggtttcc acgcttttgc cggtcagcgg 180
aacctgccgc tgcttgcgtc ctttgccggt aacgtgtacc cagcctcgt ccaaataac 240
atcatctgca ttcaagccgt gtatctcgt cagcgcgcaa ccgctgccgt acatcagttc 300

```

gaacagcgcg tgatcgcgca ccgccagcgg gtcgcccgcg tccacgggca aatccagcat 360
ccgggttcagc cattcctgcg gcagggtttt gggtagcgcg tcgggctgct tcggcggttt 420
gatgtcggcg gtcgggtcgg tatgcagcag accgcgtttg accagccagg cgcaatactg 480
ccgccaagac gacagcttgc gcgccagcgt ccgcgcattc aaaccgcgct gcgacagccg 540
ccgcaacgcc gccgtaaaat cgcgctgcga caagccctgc ggcacgccgc ctgcatcttc 600
agacggcatt tgtgccaaca gcgcaaacag ttcttcctaaa tcgcgcccgt atgccgccac 660
cgtgtgctcc gacttgccct cgcgcacgat gttttcctaaa taagcgtcaa aatgcgcccgc 720
aaaccgctcc aaaaccataa ccgccccaca caaatatcaa aaaaacagtg a 771

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<210> 3258

<211> 256

<212> PRT

<213> Neisseria meningitidis

<400> 3258

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Met Arg Arg Asn Val Pro Ala Val Ala Val Leu Arg Arg Pro Leu Arg
  1              5              10              15

```

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Gln Thr Phe Leu Asp Leu Ala Leu Ala Gln Ala Arg Ala Val Pro Ala
      20              25              30

```

```

Gly Lys Gln Gly Phe Ala Val Arg Cys Arg Leu Thr Gln Arg Gln Ile
      35              40              45

```

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Val Phe Gln Gly Phe His Ala Phe Ala Gly Gln Arg Asn Leu Pro Leu
      50              55              60

```

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Leu Ala Ser Phe Ala Gly Asn Val Tyr Pro Arg Leu Val Gln Ile Tyr
      65              70              75              80

```

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Ile Ile Cys Ile Gln Ala Val Tyr Leu Ala His Ala Gln Thr Ala Ala
      85              90              95

```

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Val His Gln Phe Glu Gln Arg Val Ile Ala His Arg Gln Arg Val Ala
      100             105             110

```

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Ala Val His Gly Gln Ile Gln His Pro Val Gln Pro Phe Leu Arg Gln
      115             120             125

```

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Gly Phe Gly Tyr Ala Leu Gly Leu Leu Arg Arg Phe Asp Val Gly Gly
      130             135             140

```

```

Arg Val Gly Met Gln Gln Thr Ala Phe Asp Gln Pro Gly Ala Ile Leu
      145             150             155             160

```

```

Pro Pro Arg Arg Gln Leu Ala Arg Gln Arg Pro Arg Ile Gln Thr Ala
      165             170             175

```

```

Leu Arg Gln Pro Pro Gln Arg Arg Arg Lys Ile Ala Leu Arg Gln Ala
      180             185             190

```

```

Leu Arg His Ala Ala Cys Ile Phe Arg Arg His Leu Cys Gln Gln Arg
      195             200             205

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```

Lys Gln Phe Phe Gln Ile Ala Pro Val Cys Arg His Arg Val Leu Arg
      210             215             220

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Leu Ala Leu Ala His Asp Val Phe Gln Ile Ser Val Lys Met Arg Arg
 225 230 235 240

Lys Pro Val Gln Asn His Asn Arg Pro Thr Gln Ile Ser Lys Lys Gln
 245 250 255

<210> 3259

<211> 1530

<212> DNA

<213> Neisseria gonorrhoeae

<400> 3259

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cccaaatact ttgccagcaa cgtcgtgcgc gatatgcacg gactgttgag taccgtcaaa 240
gcgcaaacgg gcaagggtatt agacaaaata cccggcgcga tggagtttgc ccaaaaagtc 300
gaacacaaaa tcaaaaccct tgccgaagaa gccgaacacg ccaaacagtc gctgtcgctg 360
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gtggacgtat tgaaagactt gcgcagccgc aaaggccctc agttgctgca cgtcatcacc 480
aaaaagggca acggctacaa actcgccgaa aacgaccccg tcaaatacca cgccgtcgcc 540
aacctgccta aagaaggcgg ggcgcaaatg cgtctgaaa aagaacccaa gccgcgcgc 600
aaaccgacct atacccaagt attcgcaaaa tggctgtgcg accgggcggc gccagattcc 660
cgactggttg cgattacccc cgccatgcgc gagggcagcg gactggtgga gtttgaacaa 720
cgattccccg accgctatit cgatgtcggc atcgccgagc agcacgccgt tacctttgcc 780
ggcggtttgg cgtgcgaagg catgaagccc gtcgtggcga tttattccac ctttttacia 840
cgcgcttacg accaactggt gcacgacatc gccctgcaaa acctgcccg tttgtttgcc 900
gtcgaccgtg cgggcatcgt cggcgcggac ggtccgaccc atgccggctt gtacgatttg 960
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ggcacgggta cgggcgcgcc ggtttcagac ggcatggaaa ccgtggaaat cggcaagggc 1140
attatccgcc gcgaagggtga gaaaaccgcc ttcattgcct tcggcagtat ggtcgccacc 1200
gcattggcgg ttgccgaaaa actgaacgcc accgtcgccg atatgcgctt cgtcaaaccg 1260
atagacgaag agttgattgt ccgccttgcc cgaagccacg accgcacgtg tacccttgaa 1320
gaaaacgccg aacagggcgg cgcaggcggc gcggtcttgg aagtgttggc gaaacacggc 1380
atctgcaaac ccgttttgc tttgggcgtt gccgataccg taaccgaaca cggcgatccg 1440
aaaaaacttt tggacgattt gggtttgagt gccgaagcgg tggaaacgccg ggtgcgcgag 1500
tggctgccgg accgtgatgc ggcaaattaa 1530

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<210> 3260

<211> 509

<212> PRT

<213> Neisseria gonorrhoeae

<400> 3260

Met Ala Ala Ala Asp Lys Leu Leu Gly Gly Asp Arg Arg Ser Val Ala
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Ile Ile Gly Asp Gly Ala Met Thr Ala Gly Gln Ala Phe Glu Ala Leu
 20 25 30

Asn Cys Ala Gly Asp Met Asp Val Asp Leu Leu Val Val Leu Asn Asp
 35 40 45

Asn Glu Met Ser Ile Ser Pro Asn Val Gly Ala Leu Pro Lys Tyr Leu
 50 55 60

Ala Ser Asn Val Val Arg Asp Met His Gly Leu Leu Ser Thr Val Lys
 65 70 75 80

Ala Gln Thr Gly Lys Val Leu Asp Lys Ile Pro Gly Ala Met Glu Phe
 85 90 95

Ala Gln Lys Val Glu His Lys Ile Lys Thr Leu Ala Glu Glu Ala Glu
 100 105 110

His Ala Lys Gln Ser Leu Ser Leu Phe Glu Asn Phe Gly Phe Arg Tyr
 115 120 125

Thr Gly Pro Val Asp Gly His Asn Val Glu Asn Leu Val Asp Val Leu
 130 135 140

Lys Asp Leu Arg Ser Arg Lys Gly Pro Gln Leu Leu His Val Ile Thr
 145 150 155 160

Lys Lys Gly Asn Gly Tyr Lys Leu Ala Glu Asn Asp Pro Val Lys Tyr
 165 170 175

His Ala Val Ala Asn Leu Pro Lys Glu Gly Gly Ala Gln Met Pro Ser
 180 185 190

Glu Lys Glu Pro Lys Pro Ala Ala Lys Pro Thr Tyr Thr Gln Val Phe
 195 200 205

Gly Lys Trp Leu Cys Asp Arg Ala Ala Ala Asp Ser Arg Leu Val Ala
 210 215 220

Ile Thr Pro Ala Met Arg Glu Gly Ser Gly Leu Val Glu Phe Glu Gln
 225 230 235 240

Arg Phe Pro Asp Arg Tyr Phe Asp Val Gly Ile Ala Glu Gln His Ala
 245 250 255

Val Thr Phe Ala Gly Gly Leu Ala Cys Glu Gly Met Lys Pro Val Val
 260 265 270

Ala Ile Tyr Ser Thr Phe Leu Gln Arg Ala Tyr Asp Gln Leu Val His
 275 280 285

Asp Ile Ala Leu Gln Asn Leu Pro Val Leu Phe Ala Val Asp Arg Ala
 290 295 300

Gly Ile Val Gly Ala Asp Gly Pro Thr His Ala Gly Leu Tyr Asp Leu
 305 310 315 320

Ser Phe Leu Arg Cys Val Pro Asn Met Ile Val Ala Ala Pro Ser Asp
 325 330 335

Glu Asn Glu Cys Arg Leu Leu Leu Ser Thr Cys Tyr Gln Ala Asp Ala
 340 345 350
 Pro Ala Ala Val Arg Tyr Pro Arg Gly Thr Gly Thr Gly Ala Pro Val
 355 360 365
 Ser Asp Gly Met Glu Thr Val Glu Ile Gly Lys Gly Ile Ile Arg Arg
 370 375 380
 Glu Gly Glu Lys Thr Ala Phe Ile Ala Phe Gly Ser Met Val Ala Thr
 385 390 395 400
 Ala Leu Ala Val Ala Glu Lys Leu Asn Ala Thr Val Ala Asp Met Arg
 405 410 415
 Phe Val Lys Pro Ile Asp Glu Glu Leu Ile Val Arg Leu Ala Arg Ser
 420 425 430
 His Asp Arg Ile Val Thr Leu Glu Glu Asn Ala Glu Gln Gly Gly Ala
 435 440 445
 Gly Gly Ala Val Leu Glu Val Leu Ala Lys His Gly Ile Cys Lys Pro
 450 455 460
 Val Leu Leu Leu Gly Val Ala Asp Thr Val Thr Glu His Gly Asp Pro
 465 470 475 480
 Lys Lys Leu Leu Asp Asp Leu Gly Leu Ser Ala Glu Ala Val Glu Arg
 485 490 495
 Arg Val Arg Glu Trp Leu Pro Asp Arg Asp Ala Ala Asn
 500 505

<210> 3261

<211> 1529

<212> DNA

<213> *Neisseria meningitidis*

<400> 3261

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atgtgctrgt cgtcctcaac gacaacgaaa tgtcgatttc ccccaacgtc ggcgcgctgc 180
cgaaatacct tgccagcaac gtcgtgcgcg atatgcacgg cctggtgagt accgtcaaag 240
cgcaaacggg caaggtatta gacaaaatac ccggcgcgat ggagtttgcc caaaaagtcg 300
aacacaaaat caaaaccctt gccgaagaag ccgaacacgc caaacagtcg ctgtctttgt 360
ttgaaaactt cggcttcgcg tacaccggcc ccgtggacgg acacaacgtc gaaaatctgg 420
tggaagtatt gaaagacttg cgcagccgca aaggccctca gttgctgcac gtcatcacca 480
aaaagggcaa cggctacaaa ctgcgcgaaa acgaccccggt caaataccac gccgtcgcca 540
acctgcctaa agaaagcgcg ggcgaaatgc cgtctgaaaa agaaccceaag ccgcgcgcca 600
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gactggttgc gattaccccc gccatgcgcg agggcagcgg cttggttgag tttgaacaac 720
gattccccga ccgctatttc gatgtcggca tcgcccagca gcacgccgtt acctttgccg 780
gcgggttggc ttgcgaaggg atgaagcccc tcgtggcgat ttattccacc tttttacaac 840
gcgcctacga ccaactgggt cagacatcg ccctgcaaaa cctaccggtt ttgtttgccg 900
tcgaccgcgc gggcatcgtc ggcgcggacg gcccgaccca tgccgggtctg tacgatttga 960
  
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getttttgcg ctgcggtgccg aacatgattg tcgccgcgcc gagcgatgaa aacgaatgcc 1020
gcctgttgct ttcgacctgc tatcaggcag acgcgcccgc cgccgtccgc tatccgcgcg 1080
gcacgggtac gggcgcgccg gtttcagacg gcatggaaac cgtggaaatc ggcaagggca 1140
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cattggcggt tgcgaaaaaa ctgaacgccg ccgtcgccga tatgcgcttc gtcaaaccga 1260
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aaaaactttt agacgatttg ggcttgagtg ccgaagcggg ggaacggcgt gtgcgcgcgt 1500
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<210> 3262

<211> 509

<212> PRT

<213> Neisseria meningitidis

<400> 3262

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Met Ala Ala Ala Asp Lys Leu Leu Gly Ser Asp Arg Arg Ser Val Ala
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Ile Ile Gly Asp Gly Ala Met Thr Ala Gly Gln Ala Phe Glu Ala Leu
      20              25              30

Asn Cys Ala Xaa Asp Met Asp Val Asp Leu Leu Val Val Leu Asn Asp
      35              40              45

Asn Glu Met Ser Ile Ser Pro Asn Val Gly Ala Leu Pro Lys Tyr Leu
      50              55              60

Ala Ser Asn Val Val Arg Asp Met His Gly Leu Leu Ser Thr Val Lys
      65              70              75              80

Ala Gln Thr Gly Lys Val Leu Asp Lys Ile Pro Gly Ala Met Glu Phe
      85              90              95

Ala Gln Lys Val Glu His Lys Ile Lys Thr Leu Ala Glu Glu Ala Glu
      100              105              110

His Ala Lys Gln Ser Leu Ser Leu Phe Glu Asn Phe Gly Phe Arg Tyr
      115              120              125

Thr Gly Pro Val Asp Gly His Asn Val Glu Asn Leu Val Asp Val Leu
      130              135              140

Lys Asp Leu Arg Ser Arg Lys Gly Pro Gln Leu Leu His Val Ile Thr
      145              150              155              160

Lys Lys Gly Asn Gly Tyr Lys Leu Ala Glu Asn Asp Pro Val Lys Tyr
      165              170              175

His Ala Val Ala Asn Leu Pro Lys Glu Ser Ala Ala Gln Met Pro Ser
      180              185              190

Glu Lys Glu Pro Lys Pro Ala Ala Lys Pro Thr Tyr Thr Gln Val Phe
      195              200              205

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Gly 210	Lys	Trp	Leu	Cys	Asp	Arg	Ala	Ala	Ala	Asp	Ser	Arg	Leu	Val	Ala
Ile 225	Thr	Pro	Ala	Met	Arg	Glu	Gly	Ser	Gly	Leu	Val	Glu	Phe	Glu	Gln 240
Arg	Phe	Pro	Asp	Arg 245	Tyr	Phe	Asp	Val	Gly 250	Ile	Ala	Glu	Gln	His 255	Ala
Val	Thr	Phe	Ala 260	Gly	Gly	Leu	Ala	Cys 265	Glu	Gly	Met	Lys	Pro 270	Val	Val
Ala	Ile	Tyr 275	Ser	Thr	Phe	Leu	Gln 280	Arg	Ala	Tyr	Asp	Gln 285	Leu	Val	His
Asp 290	Ile	Ala	Leu	Gln	Asn	Leu 295	Pro	Val	Leu	Phe	Ala 300	Val	Asp	Arg	Ala
Gly 305	Ile	Val	Gly	Ala	Asp 310	Gly	Pro	Thr	His	Ala 315	Gly	Leu	Tyr	Asp	Leu 320
Ser	Phe	Leu	Arg	Cys 325	Val	Pro	Asn	Met	Ile 330	Val	Ala	Ala	Pro	Ser 335	Asp
Glu	Asn	Glu	Cys 340	Arg	Leu	Leu	Leu	Ser 345	Thr	Cys	Tyr	Gln	Ala 350	Asp	Ala
Pro	Ala 355	Ala	Val	Arg	Tyr	Pro	Arg 360	Gly	Thr	Gly	Thr	Gly 365	Ala	Pro	Val
Ser 370	Asp	Gly	Met	Glu	Thr	Val 375	Glu	Ile	Gly	Lys	Gly 380	Ile	Ile	Arg	Arg
Glu 385	Gly	Glu	Lys	Thr	Ala 390	Phe	Ile	Ala	Phe	Gly 395	Ser	Met	Val	Ala	Pro 400
Ala	Leu	Ala	Val	Ala 405	Glu	Lys	Leu	Asn	Ala 410	Thr	Val	Ala	Asp	Met 415	Arg
Phe	Val	Lys	Pro 420	Ile	Asp	Glu	Glu	Leu 425	Ile	Val	Arg	Leu	Ala 430	Arg	Ser
His	Asp 435	Arg	Ile	Val	Thr	Leu	Glu 440	Glu	Asn	Ala	Glu	Gln 445	Gly	Gly	Ala
Gly 450	Gly	Ala	Val	Leu	Glu	Val 455	Leu	Ala	Lys	His	Gly 460	Ile	Cys	Lys	Pro
Val 465	Leu	Leu	Leu	Gly	Val 470	Ala	Asp	Thr	Val	Thr 475	Gly	His	Gly	Asp	Pro 480
Lys	Lys	Leu	Leu	Asp 485	Asp	Leu	Gly	Leu	Ser 490	Ala	Glu	Ala	Val	Glu 495	Arg
Arg	Val	Arg	Ala 500	Trp	Leu	Ser	Asp	Arg 505	Asp	Ala	Ala	Asn			



<210> 3263
<211> 1530
<212> DNA
<213> Neisseria meningitidis

<400> 3263
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gatttgctgg tcgtcctcaa cgacaacgaa atgtcgattt cccccaacgt cgggtgcgttg 180
cccaaatacc ttgccagcaa cgtcgtgcgc gatatgcacg gactgttgag taccgtcaaa 240
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gaacataaaa tcaaaaccct tgccgaagaa gccgaacacg ccaaacagtc actgtctttg 360
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cgactggttg cgattacccc cgccatgcgc gagggcagcg gcttggttga gtttgaacaa 720
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Thr Arg Ser Phe Thr Ala Glu Gly Arg Leu Ala Val Lys Ala Glu Gly
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Lys Gly Ser Tyr Ala Asn Phe Asp Trp Thr Tyr Gln Pro Pro Val Glu
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Thr Ile Asn Ile Asn Thr Pro Leu Gly Ser Thr Leu Gly Gln Leu Cys
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Gln Asp Arg Asp Gly Ala Leu Ala Val Asp Gly Lys Gly Asn Val Tyr

85

90

95

Gln Ala Glu Ser Ala Glu Glu Leu Ser Arg Gln Leu Val Gly Phe Lys
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Leu Pro Ile Gln Tyr Leu His Ile Trp Ala Asp Gly Arg Pro Val Ala
115 120 125

Gly Ala Pro Tyr Arg Ile Leu Pro Asp Gly Ile Leu Glu Gln Tyr Gly
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Trp Thr Val Gly Arg Thr Ala Asp Ser Gly Gly Gln Val Arg Thr Leu
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Gln Leu Asn Asn Gly Asn Leu Asn Ile Arg Leu Val Phe Thr Glu Ile
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Gly Met Pro Ser Glu Thr Glu Thr Gln Glu Gln Cys Ala Ala Arg Ile
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Gln